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A COMPARATIVE STUDY OF SOME COMMERCIAL PREPARATIONS OF ORAL PENICILLIN

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THE early studies on the pharmacology of penicillin concluded that absorption from the gut did not take place, at least in quantity sufficient for therapeutic purposes. However, efforts to minimize the inconvenience of multiple intramuscular injections were continued, and in 1945 several investigators reported adequate serum concentrations and successful treatment of infections following oral administration of penicillin.

Most investigators have attempted to protect penicillin from the effects of the gastric juice, by either chemical or mechanical means. Charney *et al.*[1] and Gyorgy *et al.*[4] used trisodium citrate as a buffer. The former measured the amounts of penicillin excreted and found the buffer helpful when the experiments were begun after, rather than before, the morning meal, while the latter obtained an average two hour level of 5.2 units per c.c. with 40,000 units as a dose in children. Aluminium di-hydroxy amino acetate permitted successful treatment of gonorrhœa,[2] and Kranz *et al.*[3] using it with single 100,000 unit doses, reported blood levels of 0.68 units per c.c. at three hours and 0.17 units per c.c. seven hours after administration. McDermott[5] used magnesium trisilicate, and found more prolonged levels with corn oil, and with oil and beeswax. Some workers[12, 13] were successful with raw egg as a buffering agent.

Mechanical protection of the penicillin in double gelatin capsules gave an average serum level of 0.624 units per c.c. after one hour in six subjects who received 100,000 units.[6] After two hours the average level was 0.156 units per c.c. The same investigators[7] cured ten cases of gonorrhœa in children and two cases of pneumonia, the latter with 800,000 to 1,000,000 units given in 24 to 30 hours. Another group enclosed the penicillin in unhardened gelatin capsules and reported cures in 14 cases of gonorrhœa using 1,600,000 units in each case.[8]

Libby[9] reasoned that since little fat splitting takes place in the stomach, an oil suspension of penicillin should be tried. This was enclosed in a gelatin capsule and 90,000 units produced a therapeutic blood level for more than four hours.

Finland *et al.*[10] compared various methods and found penicillin in saline resulted in levels as adequate as those reached by other methods, but only when given on the fasting stomach. Therapeutic levels were sustained by the use of penicillin in a capsule of shellac, beeswax and cottonseed oil. Bunn *et al.*[11] found tap water as good a vehicle as any of the others they employed in curing 45 cases of pneumococcic pneumonia.

An attempt was made by Welch and coworkers[14] to devise a method for the slow release of penicillin in the small intestine. They allowed magnesium hydroxide, and aluminium hydroxide, to fall drop by drop on penicillin, and found that absorption took place. In ten subjects given 100,000 units of this preparation, average levels were—0.29 units per c.c. at one-half hour, 0.125 units per c.c. at one hour, 0.05 units per c.c. at two hours, 0.015 units per c.c. at seven hours. When 25,000 units were given every two hours for four doses, an average level of 0.036 units per c.c. was found 28 hours after the beginning of the experiment.

Following such encouraging results, the pharmaceutical companies fabricated several preparations of penicillin for oral administration. Some were placed on the market, others held back pending clinical investigation. Five of these were submitted to the present authors, and it was the aim of this work first to test the practicability of these tablets, and also to compare one preparation with the other. The

components of the various products were not divulged.

METHODS

The subjects were ward patients and volunteers from the nursing and technical staff, all normal from the point of view of infection. Wherever possible, phenolsulphonphthalein excretion tests and gastric analyses were performed in an attempt to evaluate the effect of renal function and gastric acidity upon absorption of penicillin. Patients who were very ill, or who had cardiac decompensation, renal insufficiency or achlorhydria, were not used. The penicillin tablets each contained 20,000 or 25,000 units, and were given in single 100,000 unit doses with small amounts of water, usually 1½ to 2½ hours after the morning meal when gastric acidity is high, and penicillin inactivation in the stomach might be expected to be maximal. Water was allowed *ad lib.* Blood samples were taken one, two, three, and four hours after, and all the urine was collected two, four, and six hours after the beginning of the experiments. The mid-day meal was given between the second and third collection of blood. In a few cases one-half hour blood samples and one and three hour urine samples were obtained. Almost all of the subjects were given more than one of the preparations and although it was generally impossible to try all the different tablets in the same person, control was maintained by this method. The urine was assayed by the Oxford cup method, the blood by serial dilution.

It must be noted that the term "therapeutic blood level" is extremely elastic. The variation in susceptibility of different organisms to penicillin is great enough to make any but the highest of arbitrarily selected levels, inapplicable for general use. For example, a blood concentration of at least 0.156 units per c.c. is required for maximum bacteriostasis against *Staph. aureus*[15] and even higher levels are required for the less susceptible organisms. Pneumonia, gonorrhœa and hæmolytic streptococcal infections respond to considerably lower concentrations. The authors have selected 0.03 units per c.c. as the minimum effective blood level. This should not be taken as implying universal effectiveness but rather a concentration which will be adequate in the majority of infections caused by the less hardy pathogens.

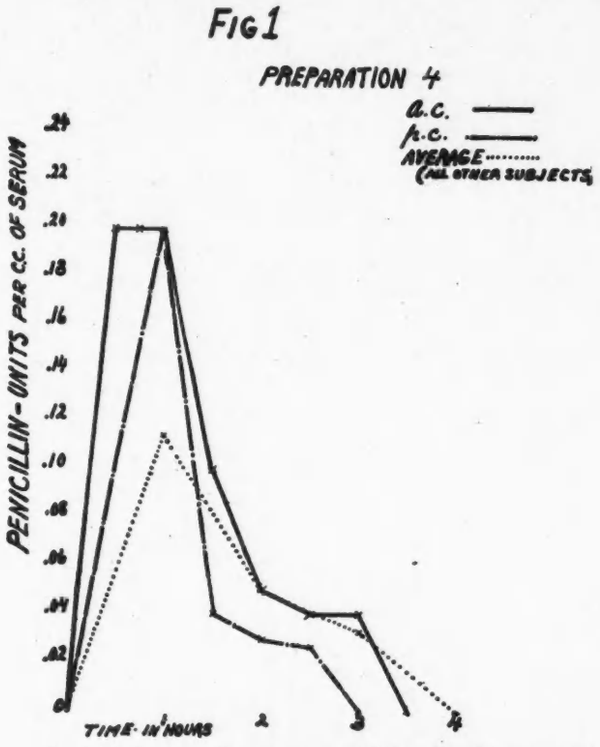
RESULTS

Of the five preparations tried, one was unsatisfactory, and no absorption or excretion could be detected. It was later learned from the manufacturer that this capsule contained penicillin which had proved to be unstable.

Preparation 1, a 25,000 unit tablet covered with a light enteric coating, was given to 11 subjects. Of these, five showed no penicillin in the serum at the end of the first hour, two had levels below 0.03 units per c.c. and the remainder were above this figure. At the end of two hours nine subjects, or 82% had therapeutic levels, the peak of 0.06 units per c.c. occurring twice. The average at this time was 0.046 units per c.c. After three hours the average reading was 0.031 units per c.c. and 64% of the subjects showed adequate levels. No penicillin was detected in the blood in any of the subjects after four hours.

Preparation 3, a 25,000 unit uncoated tablet, was given to 20 subjects. Four one-half hour readings averaged 0.07 units per c.c. of serum, the lowest 0.04, and the highest 0.125 units per c.c. was found in a healthy volunteer, three hours after breakfast. Sixteen subjects were bled at hourly intervals, and at the end of the first hour, 100% had levels above 0.03 units per c.c. Two of these were 0.15 units per c.c. but the average for the first hour was 0.061 units per c.c. The two hour readings averaged 0.038 units per c.c. with thirteen of the sixteen, or 81% showing therapeutic levels. At three hours the average was 0.025 units per c.c. and ten of the sixteen, or 62.5% had levels above 0.03, while at the end of the four hour period, two individuals had levels of 0.03 and 0.02 units per c.c. respectively, and in none of the others could any penicillin be detected after four hours.

Preparation 4 contained 20,000 units in each uncoated tablet and was administered in the usual manner to 15 subjects. At one hour the average concentration was 0.114 units per c.c. Six showed levels above 0.15 units per c.c., eleven were above 0.1 units per c.c., the remaining four, 0.05 or 0.06 units per c.c. After two hours, although the average was lower, 0.05 units per c.c. 100% still showed adequate levels, and even at the end of three hours there were thirteen subjects (87%) with therapeutic concentrations, and the other two were only slightly below 0.03 units per c.c. The average at three hours was



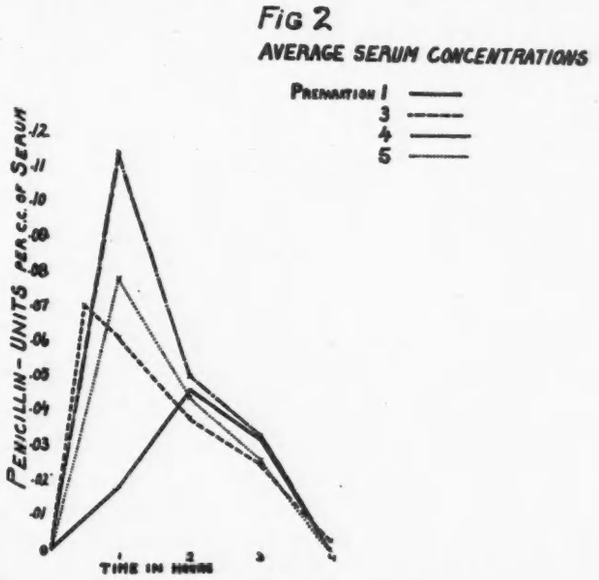
Preparation 4: Curves of penicillin blood concentrations, before and after the morning meal in the same subject, are compared with one another and with the "average" curve for all other subjects.

0.033 units per c.c. None of the subjects had any detectable level after four hours.

One additional volunteer was given *preparation 4* after an overnight fast. Nothing was ingested during the entire experiment. Two days later the same subject took *preparation 4* one hour after a breakfast of orange juice, cereal, toast and coffee. The one-half hour levels were well above those found at one hour. All the readings are graphically recorded in Fig. 1 and compared with the average curve for preparation 4. These extra readings were, of course, not included in the determination of the averages.

Preparation 5.—The supply of preparation 5 was exhausted after it had been given to nine subjects. At the end of the first hour two had levels above 0.12 units per c.c., six others were above 0.05 units. The ninth showed 0.031 units at the end of the first hour and was the only individual whose blood level was never adequate in the remaining three hours. The average levels were 0.078, 0.044, 0.026, and 0, for the first, second, third and fourth hours respectively. A therapeutic level was observed in 100% of the cases after one hour, in 77.7% after two, in 55% after three hours.

The blood concentrations of the various preparations are compared in Fig. 2, and Table I compares the efficiency in terms of actual numbers and percentage of individuals who showed adequate levels.



The curves of the average penicillin blood levels for each of the preparations are compared with one another.

The actual penicillin concentration in the urine was extremely variable, but the percentage excretion of the ingested penicillin was more stable. In preparation 1 this varied from 0.82 to 3.5% with a mean of 1.87% after four hours; 1.1 to 5.9% of preparation 3 was eliminated by the kidney in four hours, 1.8 to 6.2% in six hours, with four and six hour averages of 2.65 and 4% respectively. Preparation 4 gave aver-

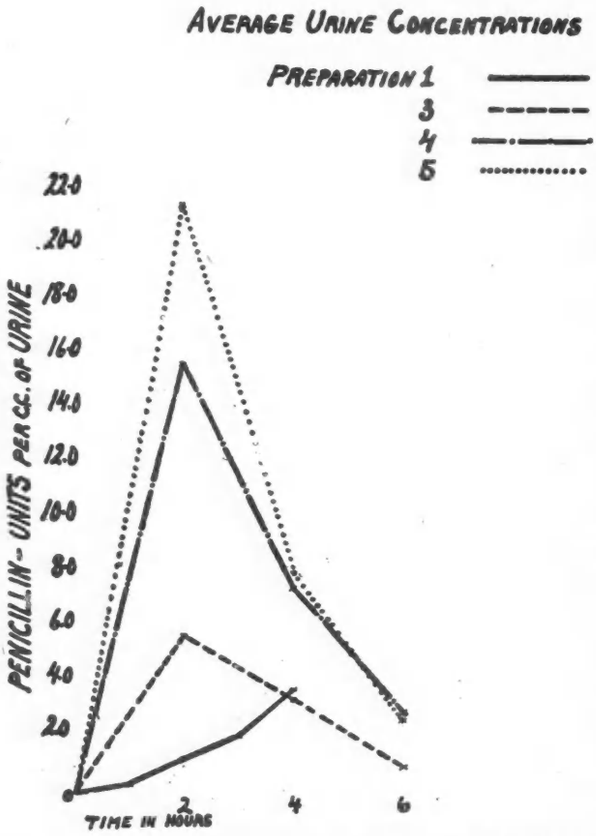
TABLE I.

ACTUAL NUMBERS AND PERCENTAGE OF INDIVIDUALS WHO SHOWED BLOOD PENICILLIN CONCENTRATIONS OF OVER 0.03 UNITS PER C.C. WITH THE VARIOUS PREPARATIONS OF ORAL PENICILLIN, P = PREPARATION. COMPLETE FAILURE SIGNIFIES LACK OF THERAPEUTIC CONCENTRATION AT ANY TIME DURING THE TEST.

	1 hour		*2 hours*		*3 hours*		*4 hours*		*Complete*
	No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*failures*
P. 1	4 of 11	36.0	9 of 11	82.0	7 of 11	64.0	0	0	1
P. 3	16 of 16	100.0	13 of 16	81.0	10 of 16	62.5	1 of 16	6	0
P. 4	15 of 15	100.0	15 of 15	100.0	13 of 15	87.0	0	0	0
P. 5	9 of 9	100.0	7 of 9	77.7	5 of 9	55.0	0	0	0

ages of 5.7% after four and 7.6% after six hours while preparation 5 had the highest excretion with a four hour mean of 9.4 and 15.2% at six hours. One individual excreted 22.2 and 22.4% of preparation 5 in four and six hours respectively, while none of the others were above 10%. The averages of the actual urine levels (not percentage) are graphically presented and compared in Fig. 3.

FIG 3



Showing the "average" curves of penicillin levels in the urine for each of the four preparations of oral penicillin.

Gastric analyses could not be performed on all the subjects, but the available data indicate that no real correlation could be drawn between blood level and gastric acidity as measured by this method. In some cases where acidity was high, so, too, were penicillin blood levels, and in others where the free acid was zero and total acid low, the levels were not often higher than in those with more normal acidity. There was also variation in the effect of gastric acidity on different preparations in the same person, one responding in the expected manner, the other either unchanged, or reacting in the opposite direction.

All the phenolsulphonphthalein readings were within normal limits. Variations in percentage excretion showed no apparent relation to the amount of penicillin in the blood.

In using the same subjects to control one preparation against the other it was noted that in the majority of cases, preparation 4 was the best. Preparation 3 and preparation 5 were equal, that is, 5 gave a better level in one person, the reverse was true in another, and the levels were the same in the others. Although, in the few times they were compared, 1 was equal to 5, it was inferior to 3 in 75% of the subjects in whom the comparison was made.

COMMENT

From the above it can be seen that although the initial levels by the oral route are not nearly as high, therapeutic levels are reached and are maintained at least as well as one-half the dose administered intramuscularly. The one-half hour readings showed that the penicillin was quickly absorbed and reached its peak within the half hour. The levels fell quickly after the first hour, then more gradually until the end of the third, and then quickly again so that no penicillin was detectable at four hours.

From the gastric analyses done it seems that in all the preparations the buffers used were effective, at least to a certain degree, in overcoming the influence of stomach acidity. That neutralization is not perfect is seen in the difference between a.c. and p.c. levels in the same subject (Fig. 1).

CONCLUSIONS

The levels reached with oral administration of these commercial preparations, are neither as high nor as prolonged as others report, but are adequate for the treatment of many human infections.

The tablets giving the highest serum concentrations are appreciably better for the first two hours. After that time, all preparations are generally alike.

In view of the occasional low values obtained with some of the products, it is felt advisable to check blood levels in all patients to whom penicillin is being administered orally, lest inadequate initial therapy promote penicillin resistance in the invading organisms.

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TREATMENT IN MENTAL DISEASE; ESPECIALLY THE PSYCHONEUROSES

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A RAPID glance at the history of treatment in mental disease shows a cyclic trend, with the cycles tending to recur at very short intervals in the past century. In the period of the Jews and the Egyptians demoniac possession was considered the underlying cause, with exorcism or violence the appropriate treatment. In the Greek period from Hippocrates to Galen and beyond there was at least a more judicious approach in the search for, and, if possible, the elimination of physical causes. The Middle Ages were indeed the Dark Ages for these hapless victims in the way they were judged and treated by their unaffected brethren. "Accursed" and "possessed" were the judgments, and the penalty of "treatment" consisted of conjurations, beatings, burnings, rolling on the wheel, throwing into cold or hot water. They thus anticipated the modern "shock" treatments, which however effective at times, are much too routinely used, as will be indicated later.

Late in the eighteenth century in such centres as York, Philadelphia and Paris, there was a dawning trend toward humanitarianism, away from dungeons, chains, filth and semi-starvation to appreciably better care, until in 1813 the Quakers of Philadelphia founded an institution for the relief of persons deprived of their reason, where they might be "regarded as men and brethren".

From then on it might be generally stated that the custodial care was carried on with a modicum of comfort and consideration, but there was no real psychiatry in term or in fact. Patients were "kept" and often "worked" with little regard and less understanding of their illness and of adequate means of combating it. In fact, it was only towards the end of the last century, and here honourable mention might be made of Maudsley in England, and others elsewhere, that a scientific approach to the problem began. Adequate staffing started to receive some consideration, and there were some efforts at proper examination as well as a few glimmerings of nascent research.

The French School with Charcot, Janet, Bernheim and others raised much furore in their investigations, which were mainly along the lines of hypnosis, and if they produced little of immediate value, they at least brought the problem prominently to the foreground: and then came a bomb shell, Freud. Hitherto, the general trend, whether in France, England, the United States or Germany, had been to regard mental disease as produced solely by physical factors, whether inherited or acquired, and amenable only to physical treatment. In short, where anything at all was done for the patient, it was along the lines of physical (or chemical) administration. The patient's mind, if its existence was acknowledged at all, was ignored as a by-product of the body.

It is within the writer's own memory that the patients in a general hospital clinic were divided between the sheep and the goats. The sheep were those who were found to be suffering from a physical ailment, especially one considered to be amenable to treatment. The rest were the goats. They were disdainfully set apart as mentally "off", as "hipped" (hypochondriac), as suffering from imaginary ailments or as being "too strong to work". Needless to add, the students took their cue from their teachers, and their reactions to such patients were even more crude.

Into such an atmosphere came Freud with his theory of mental causation of mental disease, his followers even going so far as to infringe on the holy ground of conditions which should have been acknowledged as arising from physical causes alone. The limitations of space preclude a fair description of his methods, his theories

and his interpretations. Neither can we enter into a review of the controversy which raged for a generation on this subject. However, a clue can be given by a very condensed outline of his procedure and theories. His technique was to have the patient work out his own salvation by making him talk, talk, talk, of his past (and present) problems, thus bringing out the various open and hidden (unconscious) conflicts and complexes and thereby finding his normal self. In his theory, Freud harped much on the sexual material produced by the patient in such an analysis. Much of this dealt with infantile sexual experiences, and on this Freud dwelt with excessive emphasis. Much of his interpretation and his verbiage also had more than a tinge of mysticism, which failed of acceptance or understanding by many who were otherwise adherents of his school.

What is of incalculable importance however, is that until Freud showed us the way we had no "open sesame" to the human mind. We had no real method of gauging human behaviour through an understanding of human processes of thought. He made us understand the evolution of a personality through environmental forces, with the associated motivations and the resultant implantation of ideas (and reactions), as they worked in the patient's mind. And so the patient talked and talked and talked, and in enlightening the analyst, he enlightened himself, and thus under the analyst's guidance, helped himself to a more rational adjustment. That was Freud's way; that way we still have, and it is the basis of all psychotherapy.

Some psychiatric writers of the time, faced with this dynamic approach to the understanding of the evolution of the personality of the patient, hailed it almost as a divine revelation. Others almost frothed at the mouth because it was a revolutionary idea, particularly as it dealt too extensively and too openly with sex, according to the "mid-Victorian" attitude of those days. Zangwill has remarked, "Man has imposed morality upon an immoral world" and the social conventions of that time placed a taboo on the medical acknowledgment of that idea.

In any case the tenor of textbooks or sections on psychiatry started to change almost universally, until it began to be obvious that the mentally sick patient had a mind as well as a body to be considered. In short, the textbooks began to make sense. Whether the particular writer acknowledged, ignored or railed at Freud, he carefully borrowed much of his technique in the handling, examination and, more particularly, in the interpretation of the personality of the patient. If the worst came to the worst a writer could evade Freud by stating that he was following Pavlov's ideas in demonstrating that we are in the main the product of our conditional reflexes, *i.e.*, of our environment. And there, for the present, the matter rests.

Unfortunately, however, purely psychotherapeutic, *i.e.*, person-to-person treatment, even with a mass of the Freudian doctrines and interpretations excluded, is a very time-consuming process, so that factory methods have been evoked and mechanistic procedures run riot. Plausible but unconvincing theories have been offered that secondary pathological or habit formations have arisen from the chronic mental change (as though new fibre tracts had been formed in the brain); that merely digging to the sources by psycho-therapeutic methods would not change or break these secondary patterns (mental or physical), therefore other—mechanistic—methods have to be utilized to break the vicious circle.

It so happens that in this attitude there is an element of fact, but fact not justifying the conclusions of the mechanistic school. The writer for a generation has preached that persistent perversion of function might result in structural alteration, *i.e.*, the physical disturbances in the neuroses might lead to peptic ulcer, goitre and even to arterio-sclerosis from hypertension and to diabetes. To this category electroencephalographic changes might now be added. Of course, these physical resultants cannot be removed by kind words or psychotherapy. On the other hand, no amount of mechanical treatment will remove the causal emotional conditions, bring about the readjustment of the personality, or prevent a continuation of the same process that led to the formation of the first ulcer, from forming a second or a third. On the contrary it is amazing how often systematic psychotherapy, if applied soon enough, will arrest the early manifestations of these conditions. In fact psychotherapy is often essential to prevent or arrest the recurrence of these conditions, even after one or more surgical operations.

In justification of the mechanical cult various neurotic syndromes are arranged and rearranged into different patterns and new names are given them (as is the psychiatric wont).

Then attempts are made to fit them with drugs which may be used to counteract them. Sedatives are given to dull the patient's sensations. Certain substitution, replacement or desensitizing chemicals are injected to correct or replace symptoms of overactivity or deficiency resulting from emotional maladjustments. Thus, these are attempts to ignore or to detour the basic environment factors of which these symptoms are the result. With the same logic various shock treatments to the brain or brain operations are indulged in at probably greater cost to the personality of the patient. These shock treatments include among others metrazol and insulin and the electric shock treatment. Presumably these treatments produce some cellular changes in the brain structure, which is occasionally demonstrable post-mortem and not infrequently clinically evident in the patient's diminished intellectual capacity. Finally, the various brain operations (leucotomy, lobectomy, cortical ablation) are employed to transect brain fibres supposed to convey the undesirable syndromes. In any case we have brain damage, sometimes carried beyond or below the mark aimed at, and always, with an alteration of the native personality, usually for the worse. For purely organic mental conditions of the brain, these procedures may often be justifiable but for non-organic mental defects justification must be exceptional, and generally hard to define.

Our purpose is to cure the sick mind, to "heal" it in the Anglo-Saxon sense of the word "to make whole". We seek to restore the personality to normal mental health. Presumably every psychiatrist — and that includes the psychoanalyst—who uses psychotherapeutic in preference to mechanical measures employs not only the cathartic or analytic method but also suggestion, explanation, correction, sympathy, advice and direction and, in some cases, hypnosis as well. The first of these methods is the essential one. The others however valuable they may be are merely adjuvants. Are we justified in shifting to mechanical methods that at best are but makeshift stop-gaps—drugging, replacement therapy or at worst destruction—which, whatever they do to the presenting symptoms may leave behind an altered or damaged personality, and often with new and undesirable symptoms.

It might be desirable to give a few case histories at this point:

CASE 1

F.B., 30 years old. Has worked very irregularly for past few years. His mind has always been troubled. His sleep is slow in coming, and is poor and jumpy; sometimes in his efforts to fall asleep he would gasp for breath. He got into the habit of drinking beer to fall asleep, first one quart, then two, then three before bed-time. He has a fuzzy feeling in his forehead so that he cannot think clearly. He had squinted in his early years. Now he feels as though his eyes are going crooked again, although he knows they are not. There is a funny feeling in the right side of his face. His throat is dry. He often has a pain in the neck, at the collar, also pains in the back and a sinking feeling at the stomach. Three years ago he gave up his job and stayed home for a long while because he felt that there was an odour emanating from his body. That idea passed but is always on the threshold of revival. He always used to worry about syphilis although he didn't have it. His arm has spontaneous jerky movements. Occasionally his hand applied to his face feels like a strange hand. Sometimes when lying in bed with his arm outstretched to the side, he has to move it to convince himself that it is his own, although he knows it in his mind. Sometimes it is an effort to breathe.

Here is a man who has been sick mentally for many years and has not worked for lengthy periods. He shows symptoms that are a mixture of neurasthenia, anxiety and obsessional neurosis. One could of course, carefully work out sub-syndromes, such as gastro-intestinal, vascular, musculo-cutaneous, respiratory, etc., and perhaps seek out drugs to counteract those syndromes. But what futility! One could as easily seek out sub-patterns in a measles rash, and treat each sub-pattern separately. The whole person is sick—mentally—and the whole person should be treated mentally.

He went to a psychiatrist who gave him some explanations and kept him on veronal for nearly a year. As was to be expected there was no improvement. By October, 1944, he was admitted into an institution, where he remained for nearly 8 weeks, receiving two daily injections of adrenalin for 50 days, and some additional ones as an out-patient afterwards, but his complaints persisted. He finally came to me in March, 1945, stating that he felt worse than ever, except that he had given up drinking as he was sleeping better. He was still taking veronal but had not yet made any attempt to seek work.

He was put on an almost daily routine of one hour's psychiatry (mainly the psychoanalytic technique) and the following was elucidated within 6 treatments. He had been sickly as a child, with a background of a domineering neurotic father and an over-solicitous mother, who never allowed herself to forget the sickly childhood. He was timid at school, "put on a bluff" before the other boys, but trembled inside in the presence of the schoolmaster. He evaded all issues and responsibilities. He used to pilfer from his father and brother. He suffered from a severe sense of guilt and fear, mainly on the basis of sex offences. He was slighted by the girls and this made him feel inferior. He always pretended that he was more important than he was, and earned more than he did, and he always spent more than he earned. He told lies to evade situations. He always got behind in his work, no matter the job. He always gloated over praise for a rare good day's work; he never followed it up the next day. At his work, he always had a ready answer, although he actually didn't know. He loved to make categorical statements, and if called into ques-

tion, would back them up with a fictitious authority, *e.g.*, a man he knew, the doctor, the minister, some well-known politician. The patient further related that when he was making "good" money his father accused him of buying his friends, male and female, by his extravagant expenditures. Finally, the patient stated that on account of his timidity and lack of skill he never indulged in sports and that he never did a job sincerely, but always "covered up". He is courting a girl, but he hasn't a nickel, only debts and no prospects.

Here is 30 years of maladjusted personality. How could any amount of drugging treatment be expected to re-educate or readjust it?

CASE 2

R.E., aged 37. A patient with marked psychomotor activity and agitation, complete insomnia, in spite of over-drugging, and intense anorexia. He lived for months on milk alone and for some days not even on that, and had lost about 40 lb. He had a terrrific stammer, which rendered him completely inarticulate at times. He was a remarkable personality, whose experiences would outshine those of any Oppenheim hero, half a dozen times over. In addition he had many legitimate conflicts.

On the bare statement of the symptoms one would reasonably diagnose acute agitated depression, but with a closer study of the patient and the realization of his absolute clarity of mind, one could not but conclude that he was suffering from anorexia nervosa with acute anxiety, rather than from psychotic depression.

Treatment was instituted on the analytic basis but under the guise of an excellent superficial co-operation, a terrific "resistance" soon became manifest. This was a resistance against telling all that came into his mind, which as anyone knows, dams up all other catharsis (information). The patient when challenged acknowledged the impasse. The psychiatrist believed he knew what was being withheld, but could not challenge the patient with the material. He therefore suggested that the patient obtain another psychiatrist's advice.

He did consult another psychiatrist, without making the impasse clear and accepted mechanical treatment in the hope that it would relieve his misery. He was given a daily injection of adrenalin for 25 days without relief. This was followed by several electric shock treatments, which were also ineffective. Finally, bothered by the importunities of the patient, the psychiatrist suggested his entry into a mental hospital. The patient therefore, returned to me, still a rather brilliant and unusual character, but with cerebration and memory a bit dulled. As the original impasse still existed, and there was now the added organic mental change the work has not been resumed.

CASE 3

Here a composite picture might be made not only of cases in the literature but of numerous personal cases, where the patient had had one or more attacks of depression in the past and had made a complete recovery. In more recent years these patients had been treated for recurrences by shock therapy. Again, there was generally apparent recovery, but in some cases with a change in the personality of the patient. There appeared also to be memory defect as well as a lowering of their higher mental capacities, as in abstract reasoning, fantasy formation and philosophical integration. This of course, applied also to patients who had received such treatment for a first attack.

Brain operations for purely mental diseases, mainly of the obsessional type.—This again is a composite picture. Reports of such cases in the literature, and especially the seeping in of later reports, generally do not make edifying reading. Personally, I have seen only nine or ten such and again I have not been edified. In all of them there appeared to be only one case that certainly seemed to be the better for the operation, so far. Two of the cases who looked much worse for wear, could not be judged fairly so soon after the operation. One who was certainly not a compulsion neurotic, had given clear-cut evidence of being an escapist from military service. All the others showed definite deterioration. All these patients had been suitable cases for systematic psychotherapy, with results which might have been reasonably hopeful. As a result of the organic brain change from operation, psychotherapy is very probably no longer of any potential value, or even applicable. One might conclude this paragraph with a note by the way on the number of reported—and unreported—cases in the literature of resultant epilepsy or even death from such operations.

Neither have I seen lasting good effects from the use of substitution or replacement therapy in the great majority of those cases in which the mental and physical manifestations were not clearly the result of primary organic change in the glands themselves. Where these manifestations were more or less chronic or recurrent in character, and obviously psychogenic in origin, hormonal and other chemical treatments acted, if at all, only as temporary stop-gaps. In short, it was a case of treating an intermediate effect and not the cause.

Time and the limitations of space preclude the consideration of other types of treatment, but reference must be made to the patients under our care in the clinics and elsewhere, where sedation is mainly used. We see them as more or less regular attendants, sometimes for ten, twenty or even thirty years, with no other effect at best than keeping them quiet. What if in the beginning these had received the prolonged psychotherapy, that in the course of several months has restored private patients to work, to adjustment to family, to environment and to themselves—in short to health, happiness and usefulness!

In the present war there have been great emotional shocks at the front which have caused personality breakdowns. Let us evade the question as to whether the shock was a sufficient cause in itself or whether it merely brought to the surface a hitherto undisclosed instability. In any case, sedation to the point of drugging has according to many reports been of help in relieving

and perhaps returning the victims to active service. Yet even here discordant notes appear as when Powdermaker and Heath reported valuable results from the use of ergotamin tartrate in what they call "battle reaction", and in a similar series Grinker failed to obtain any benefits, but induced phlebitis in a considerable percentage of his cases instead. Grinker here regretfully concludes that this method is not as satisfying as the person-to-person, *i.e.*, the psychotherapeutic method.

Of course there can be no question that in cases of mental disease from organic causation, organic or chemical treatment is a *sine qua non* in such conditions as brain tumour or trauma, brain infections, general infections, intoxications, avitaminosis, etc. Brilliant results have been achieved by appropriate mechanical or chemical treatment in such cases, and perhaps with psychotherapy as an occasionally useful adjuvant, they are the only suitable methods of treatment. On the other hand there is too much tendency to flaunt the efficiency of malaria in general paresis as an example of the effectiveness of mechanical treatment. Here I am quite in accord in view of my very extensive experience with malarial treatment of cerebrospinal lues. Excellent, if one admits its unique value in an almost unique condition, but it does not help to establish any general principle.

Is there any universal objection to mechanical treatment of mental disease of apparently mental origin? Yes and no. In my opinion no mental patient should receive mechanical treatment, except for suitable nursing measures and temporary mild sedation, until all the resources of adequate psychotherapy have been exhausted. The passage of time alone in many instances, notably in the manic-depressive psychoses, is adequate for a cure. Where, with sufficient effort, no other help is obtainable mechanical measures might be utilized. On the basis of that understanding further experiment and investigation, along mechanical lines, should even be encouraged. Perhaps the greatest justification for the use of shock treatment has been found in the schizophrenias and involutional (type) melancholics. But what has it cost the patient in alteration of the basic personality through structural brain alteration from the treatment? Certainly the shock treatments do not help in the compulsion obsession neuroses; and again at what cost? On the other hand, we have to admit that the obsessional neuroses are amazingly obdurate to psychotherapy, though some of them undoubtedly become well adjusted through such treatment. Are we justified in submitting the unsuccessful ones to brain operations. How many are the successful results and at what ultimate cost? And what about the cost to the unsuccessful ones, in terms of permanent personality damage?

There is no general hospital but what would be the gainer by having a large fulltime psychiatric staff. A large percentage of the ward patients, even many without a neurotic background, might be helped by such a service to make a better, a quicker and a more assured recovery, to take or resume their place in life. In how many of these cases is prolonged and expensive investigation maintained even to the point of operation without finding adequate cause to explain their invalidism or to eliminate it? Many of these patients are repeaters, even on the operating table. What a source of expense to the hospital, to the staff, to the families or to the community, sometimes for life!

This also applies to lifelong steady customers or repeaters at our outdoor clinics. What a waste in life, in happiness, in money and in hospital service! Theoretically if any considerable percentage of these could be cured or adequately adjusted at the outset by consistent psychotherapeutic treatment of say 50 or 100 or even 150 hours, no matter how expensive that would be to the community, the gain would still be almost incalculable. It would mean not only a saving of the individual to himself and to his family but a restoration to productive work. In addition, it might mean a saving in hours of previously misdirected hospital time.

SUMMARY

Only psychotherapy cures psychogenic conditions. The treatment is long, arduous and expensive. Every hospital has a large percentage of patients requiring such help, therefore, every hospital should have a large staff of full-time psychotherapeutists, with adequate social service help. The method is of necessity expensive, but would be much the cheapest and, more important, the best, in the end.

It was not until 1791 that the scientist Dalton, himself colour-blind, described the now familiar phenomenon of red-green colour-blindness.

PSYCHOGENIC FACTORS IN BRONCHIAL ASTHMA*

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THIS important subject is one in which I feel that the physician interested in allergy and the physician specializing in psychiatry may with mutual profit merge their efforts, at least in certain cases. One knows only too well that there are extremists in both camps who wear blinders and hold too restricted a view. There is the red-hot allergist who has seen the vision and maintains against all comers that allergy is the *sine qua non*, and in many cases he can prove it. Then there is the psychiatrist who would seem to my manner of thinking to be too anxious to ascribe disease to emotional causes. I agree with Hansen when he says "One finds that points of view which apparently represent opposite poles can be maintained tenaciously only because neither side has sufficient experience to evaluate critically the arguments adduced by the other".

Before proceeding further, it may be permitted to recall that bronchial asthma is a symptom-complex manifesting itself in paroxysms of bronchial constriction which render difficult the passage of air to and from the lungs. This constriction is effected by a neuro-muscular mechanism as the result of exposure to an extrinsic foreign protein to which the patient is sensitive or allergic, or to an intrinsic allergen of bacterial nature; or as a reflex response to irritative stimuli in the upper respiratory tract, by way of the vagus nerve; or from other causes. In addition to the spasm of smooth muscle there is also, as part of the allergic reaction, œdema of the bronchial mucosa, and stimulation of the mucous glands in the submucosa, with exudation into the lumen. Bronchial asthma must be considered then as an allergic response, or altered type of reaction in individuals who are sensitive or susceptible to the inhalation or ingestion of foreign proteins or allergens. Exposure may also be by injection, as for instance after bee stings or after an overdose of pollen extract when urticaria and asthma may come on with startling suddenness.

Important as is the allergic conception in the etiology of bronchial asthma, one is quick to acknowledge that there must be other factors in many cases. We have repeatedly studied cases which to the best of our knowledge were due to exposure to an inhalant or food protein and yet attacks did not always ensue from exposure to the specific allergen. In some cases it would appear that a heavy exposure to the allergic substance is required, or that there be a summation of such stimuli, or even a combination of allergens. On the other hand some patients only develop asthma after an infectious factor comes into play such as an ordinary cold in the head or an infection in the paranasal sinuses. Twenty years ago Dr. John Freeman of St. Mary's Hospital, London, himself a pioneer in allergy, in speaking of these "toxic idiopathies" (spasmodic rhinorrhœa and asthma) considered the allergic reaction to the protein irritant as but one of the links in the causal chain which might comprise such other links as the diathesis or heredity, nervous factors and trauma (or the regional factor). We ourselves had come to realize that there must be modifying influences, and had conjectured the possibility of an "allergic threshold" beyond which the anaphylactic or allergic waters overflowed, which could be affected by such non-specific factors as fatigue, emotional or psychic causes, constipation, infection and endocrine influences as at menstrual periods and the menopause. French says "It would seem quite possible that emotional disturbances might play even a very important rôle in determining the threshold of sensitivity to the specific allergens".

The etiology of asthma in many cases is far from simple. Multiple sensitization is a common finding, not only to related foods and inhalants such as epidermals and pollens, but to divergent substances. We would regard the etiology as an interlocking set of factors corresponding to Freeman's causal chain. In the therapy of a given case one may effect a cure or marked amelioration by cutting through one of these links and so freeing our patient.

CASE 1

A pilot officer of 26 years was born and reared on a farm just outside of Edmonton. He began to have asthma at the age of 6 years, and attacks continued about every two or three months up until the time he left home in 1939 at the age of 19 to join the air force. He knew about horses and cows as causing his trouble but thought he had built up some resistance to the extent that he could drive a horse (but not go in the barn for any time) unless he got overtired or excited as in driving to a party. All the time on the farm, he was never able to attend a party, as he always developed asthma en route and would have to turn round and come

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home. Since being away from home he has been free from attacks unless he had contact with horses. Now he is anxious to know if he can return to the farm which is now his. His skin tests showed horse dander 20 plus, cow hair 6 plus, dog hair 3 plus and house dust 8 plus. The grass pollens (hay, timothy, etc.) 8 plus. He also had a mild sinusitis. Desensitization against horse dander ought to be quite feasible in this case, and will be done.

CASE 2

A.A., a boy of 11, was first seen in September, 1932, for asthmatic attacks which began 6 years previously at his home in Cornwall, Ont. About this same time he had his tonsils out. Attacks had occurred two or three times a week, lasted two or three days and were worse at night; he also wheezed during sleep, and attacks occurred winter and summer. Free periods might last two or three weeks. There was associated sneezing; he always rubbed his eyes and seemed to have a slight cold in his head. In the winter of 1931-32, he was sent to Montreal to stay with relatives. During this period away from his family he was absolutely free of attacks and gained weight. So the family decided to move to Montreal, which they did with all their household goods in May, but the asthma came back promptly.

A case described by Moos was rather better than mine. His case could not bear the climate in Silesia and moved to Offenbach because he had severe asthmatic attacks. In Offenbach he felt well but when he received a letter recalling him to Silesia, he had a new attack. However, my patient was entirely free during his period in the hospital. On October 14 he was sent home and had an attack that night and on two succeeding nights. He had been found to react predominantly to house dust, and an autogenous extract was used for treatment with complete success. He is now 24 and came down from Cornwall to see me recently because of some asthma which had supervened on hay fever during the ragweed season. This was the case which first impressed on me the importance and specificity of house dust.

This case would seem to negate Naber's dictum, "Where in spite of change of climate, the attacks do not disappear, there is always at work a psychic factor residing in the patient himself, of which he is ignorant and in which he is unwilling to believe if told about it". It also emphasizes Hansen's and our own view that many allergic conditions attributed to psychic origin can be recognized as of organic origin if one persists in a study of the organic factors.

When asthmatic attacks are long continued and recurrent, it is not unlikely that the attacks originally were the result of exposure to a single protein, *e.g.*, cat hair. But as time goes on other sensitivities may be acquired, the element of infection may be added, and very likely will be, or even the development of nasal polypi which we recognize as the outcome or result of allergy, as these may cause asthma as a reflex phenomenon. So in time less and less of the specific factor and even non-specific factors may precipitate attacks. The patient may then become habituated to attacks by means of a pathway which is laid down or grooved. The attacks may also—it is agreed—occur as a type of conditioned-reflex, the theory being that the attacks are originally a reaction to some allergic substance, but that other stimuli which have been regularly associated with the presence of this allergic substance may become conditioned to precipitate attacks, (*cf.* the hackneyed paper rose story). "These facts would seem to furnish adequate basis for the possibility of asthma attacks being precipitated by emotional factors in a person who is already suffering from bronchial asthma" (French). In this connection, the following case report is of interest and pertinent:

CASE 3

E.M. was 25 years of age when he first consulted me nearly 15 years ago now, for paralyzing asthmatic attacks which began at the age of 4 in Peking, following a very severe illness with dysentery at about 3 years. During this illness he was fed on teaspoonfuls of brandy and milk. Associated with, or preceding his asthmatic attacks, abdominal cramps had always been a prominent symptom. He had once been tried on a diet of milk and strained vegetable soup exclusively for two weeks, and during this time he had bilious turns and vomiting associated with asthma every two or three days. This suggested an intoxicating effect from milk protein. It is in cases of this kind, where there is abrasion of the mucous membrane of the gut, that sensitization may be acquired by the passage of the unsplit protein molecule from the lumen of the bowel into the body. But the tests to lactalbumin and casein (by scratch or cutaneous method) were quite negative. He was found positive to a large number of other foods, animal danders, feathers and pollens which explained his hay fever during the summer months. To a considerable degree he improved under management with regard to these, but not completely. Finally, I told him to abjure milk and milk foods altogether, and with these precautions he became entirely free from asthma and eventually went on active service overseas.

He had noticed an increased tendency for attacks to occur at week-ends. He was a lean, highly intelligent, nervous, high-strung and intensely active individual. I suspected that his week-end attacks were associated with the increased opportunity then presented for asthmagenic tendencies to take effect, unopposed or uninhibited by the stabilizing effect of sustained mental and physical effort. To this view some support was brought by an incident which occurred one summer on the Richelieu River. He was in the middle of an attack of asthma, when a hundred yards up the shore, he noticed a girl in obvious difficulties in the water. In his own words, he sprinted up the beach in record time, rescued the girl and then realized that the asthma had left him completely.

This is a good instance of intense emotion and violent activity causing the disappearance of an attack. The mechanism, as several authors have pointed out, is most probably by mobilization of adrenalin by the intense emotion. By contrast, situations that precipitate attacks seem to be those in which the patient must suppress his emotion, or in which he finds himself completely helpless to give adequate expression to it.

In reviewing such psychiatric literature on bronchial asthma as I have been able to compass, it is difficult to escape the impression that some

at least of the authors approach the subject not without bias. The suggestion is strong that most cases on which these reports are based are psychoneurotics who also have asthma. One can hardly conceive of a healthy-minded asthmatic submitting to psychoanalysis for periods up to 43 months!

There is of course the extremist view exemplified by such authors as Costa who believes "that a psychic or psycho-sexual cause is to be found in every case of bronchial asthma", and states that asthma only becomes established and fixated through neglect of this etiological factor, followed by what he calls "an irrational polypragmatic drug therapy". So also Moos claims wide recognition for the fact that the psyche is almost always the primary, most usual and most important factor. He cured 7 cases by psychotherapy alone, in which medicaments, climate, breathing exercises, hydrotherapy and inhalation therapy had failed, and even noted the disappearance of eosinophilia. No reference was made to any allergic approach in these cases. Later he reported on 16 cases, much more severe, who were unable to work. In all of these he states that the bronchitic lung signs entirely disappeared and the emphysema subsided.

On the other hand, K. Hansen who has made careful observations on the relation of psychic and allergic factors, believes that in practically all cases an allergic diathesis must be assumed. He states that "the disease and at least the first attack are in every case anatomically and physiologically, *i.e.*, organically, determined, and not a form of psychogenic reaction; and adds that "the single attacks may be precipitated, furthered or inhibited by psychic factors". Subsequent attacks may in many instances be explained on the basis of a conditioned-reflex mechanism. E. Wittkower and H. Petow write as follows:

> "Whether psychic factors play the rôle simply of one of many conditioning factors in the development of asthma, or whether asthma in a greater or lesser number of cases is to be considered an organ-determined psychoneurosis is a matter for discussion. The precipitation of single attacks by psychic influence in already established asthma has been known for a long time and is not hard to explain: the effect is discharged over the vegetative nervous system and mobilizes the mechanism already established. It is necessary to assume that the precipitating effect finds psychic and probably also somatic preparedness."

Inquiring more precisely into the nature of the psychological factors, French in the Chicago Institute monograph on this subject points out the difficulty of differentiating sharply between the allergic and psychological factors in the etiology of asthma. Studies by himself and collaborators were made over a four-year period on 27 cases of bronchial asthma who submitted themselves to psychoanalysis for periods up to 43 months. French says,

> "It is impossible upon the basis of our studies to draw any reliable conclusions concerning the frequency of emotional conflicts in bronchial asthma, since our procedure obviously selected just those patients who were suffering from both emotional difficulties and asthma."

One gets the same impression in reading MacDermott and Cobb's report wherein they found an emotional component in 37 of 50 cases investigated from this point of view. (I wonder in how many other types of disease would the not impartial inquirer fail to find an emotional component!) In the majority of their cases the stigmata of psychoneurosis were unmistakable.

As to the precise nature of the psychological factor, it seems to be something like this: when an infant is born, it becomes separated from the mother, and respiration is initiated by the first cry which terminates a previous period of suffocation. At this moment the infant is overwhelmed by a mass of excitation which it responds to by crying. The infant's cry is at first a physiological response, the purpose of which is to establish respiration at birth. It soon assumes a psychological meaning as a reaction of helplessness in the face of needs which the infant is unable to satisfy. After a time the infant learns that crying brings the mother, and the cry becomes then secondarily a means to bring the comforting mother to his side.

French says:

> "So far we have found that the acute asthma attack occurs in place of a suppressed cry as a reaction to the acute fear of losing the mother's love. This fear of losing the mother may be aroused not only by the prospect of actual physical separation but also by temptation situations that threaten estrangement from the mother. It would seem that most patients with asthma are particularly prone to attacks at times when they are undecided or in conflict as to whether or not to leave the mother figure or the substitute therefor who may be the psychiatrist himself through a process of 'transference'. It would seem that the precipitating situation is not the actual fact of separation from the mother but the indecision and conflict between the urge to cling to the mother and the need to separate from her. It is also interesting that it is sexual temptation rather than forbidden sexual gratification that usually serves as the precipitating cause of the attack."

Upon this subject Weiss, on the basis of analysis of a case of bronchial asthma, comes to the conclusion "that the asthma attacks develop as a reaction to separation from the mother". He

specifically compares the asthma attack to the reaction of "the shrieking, helplessly sprawling, new-born child with blood-red swollen face", and he interprets this behaviour of the new-born child as a protest against the separation from the mother's body which has just taken place, and offers the tentative conclusion that "the patient's asthma attacks are perhaps a recapitulation of the birth experience which tends to be reactivated every time the patient is threatened in later life with separation from the mother".

Concerning the personality structure of children suffering from asthma, Rogerson, Hardcastle and Duguid found that no less than 17 of a total of 23 children were fussed and overprotected by their parents to a pathological degree. As a result of their studies, they find that these children tend to a common personality structure in exhibiting marked overanxiety and lack of self-confidence, considerable latent aggressiveness and egocentricity. The authors raise the question which they do not attempt to settle as to how far some of these characteristics may be the result of difficulties caused by the disease itself. It is not too far fetched to concede a feeling of anxiety in the fear of subsequent severe attacks in a patient who has already experienced former attacks of a severe type.

FURTHER ILLUSTRATIVE CASES

CASE OF A.H.

A.H., a girl of 12 was first seen in May, 1942. She had been a severe asthmatic all her life, having contracted a cold and cough at the age of 8 months in England. Between the ages of 2 and 6 years she had asthma in the summers but the winters were free until the age of 6 when asthma occurred in the winters also. At 7 years she had whooping cough badly, and in the winter had a bad attack of asthma lasting two or three months. Following this she was free of asthma for 3½ years, the last 15 months of which was in British Guiana, though she did have occasional bouts of hay fever.

Asthma started up again at 11 years on being taken to Barbadoes to a boarding school. Attacks were very severe requiring morphia every night. She was in bed for six weeks during which time she lost 20 lb. and "her nerves were bad", as she had never been away from her mother before for even one night. After this (May, 1942) she was taken out of school and brought back to British Guiana. During the next year asthma was almost continuous. In January, 1943, a bad attack suddenly stopped when she became frightened by a lorry catching fire just outside of her window.

Her family came to Montreal in April, 1942. For the first week she seemed free, and then asthma began again day and night, for which she used an adrenalin spray or vaporizer far too frequently and without any attempt at control. (May I interpolate here to say that no patient of this psychological make-up should be intrusted with such an apparatus.)

Allergy tests were not very conclusive, except that she did react to grass pollen which I considered probably accounted at least in part for her hay fever in England and the summer asthma then. She also reacted to house dust and orris, as well as to cat, dog and rabbit hair.

The first problem however appeared to be the psychological one, as the child was suspicious, resentful, overshy and unco-operative and very much tied to her mother. She was still afflicted with nocturnal enuresis. So I set myself to gain her confidence and co-operation and this came very slowly.

During this time she was treated with grass pollen injections and a mixture of inhalants comprising house dust, feathers and orris. She had mild asthma from time to time, but on the whole did not do badly, and needed adrenalin only occasionally. During the winter of 1942-43 she attended day school and really got along very fairly, with a little wheeze now and then but lost no time from school until the end of April. From that time on the asthma became more or less continuous, and remedial measures were uncertain. The functional element was very apparent. Finally after dragging on for a long time, I insisted on hospitalization and had her admitted on August 10, at first with a night nurse. Her blood showed a 12% eosinophilia. Sedimentation rate was very slightly increased. X-ray of the chest showed increased broncho-vascular markings with a tendency to emphysema. Sinus x-rays showed mild chronic thickening of the antra. There never was any sputum. We did put her on deep x-ray therapy and she was given 4,100 "r" units through four portals to the chest. She began to improve very soon, became very friendly, helped in certain respects on the floor such as answering the telephone during the lunch hour, etc., and ceased to require adrenalin. She was discharged on September 1, with the recommendation that she continue on a stock vaccine (influenza catarrhalis of Lederle) and that she should have a thorough course of grass pollen hyposensitization commencing the next spring.

She did well for a month, when at the end of September she moved with her family to Sydney, N.S. There she soon began to develop frightful asthma and on October 15 was flown back to Montreal and admitted to the hospital where we put her on small additional doses of radiation amounting to a total of 1,000 "r". She continued to require adrenalin as well as a daily intravenous dose of aminophyllin until November 4, when there was no longer need.

In November, she was admitted to a boarding school for girls in the city. On the whole she did well—danced, made friends, attended concerts and theatres, and began to enjoy social life for the first time. By a stroke of luck I managed to keep the mother in Nova Scotia for the Christmas holidays, but she came up for the Easter holidays when she visited a chiropractor and took her daughter for a treatment. However no serious harm came of this except that I spoke my mind rather too freely.

She went to Nova Scotia to her parents for the summer holidays which were free from trouble. She came back to boarding school in September, 1944, until the following April when they went back to England. During this period she had mild asthmatic attacks which generally yielded to treatment. If they didn't clear up readily she would be moved down to the infirmary which she always resented as she was then isolated from her companions, but I always thought this threat of the infirmary tended to shorten the attacks.

This patient certainly used her illness to tyrranize over her mother. The matron at the school thought that she sometimes staged an attack when she was crossed in some way.

CASE OF B.S.

B.S., a boy of 19, was first seen in October, 1938, for chronic cough since the age of 13 years; with no real asthma but "choky" attacks. In June, 1936, he was seen by an otolaryngologist who removed some bits of bone from the nose, but there was still occasional nose blockage, with little discharge. The condition was not influenced by the weather, and was non-seasonal, and his nights were never disturbed. But whenever he

left Montreal to go up to the Laurentians (four occasions) or to go south to Florida (two or three occasions) his cough and sinus trouble disappeared on the way and in Florida he could run a mile and a half and swim without embarrassment.

There were some râles at the extreme right base, and he had been seen by at least three prominent chest specialists with the query of bronchiectasis. At a subsequent visit no signs could be elicited.

His father was a wholesale butcher, and though the boy's ambition had been to study law, he had stayed on in the business apparently to please his father. The mother was very oversolicitous as he was an only child. The patient admitted "that Dad was always on his shoulders" and that he himself was restless and always weighed down by something. He said he always was, and always would be attracted to his father's business in his spare time even if he was studying law which he would do tomorrow if he could get permission.

Tests were done and there were a few reactions not considered of primary importance. Sputum culture yielded *H. influenzæ* and pneumococcus type 3 from which vaccines were prepared and he was carried along on these, meanwhile being referred to a psychiatrist. About five weeks later, his cough having considerably improved, he had an exacerbation of symptoms, when it was ascertained that a cousin had been taken into the business two days before and was doing his work. He admitted to feeling out of place and being dissatisfied, as he was "deprived of responsibility at this juncture". At other times when things were going fairly well with no conflicts, he felt well and there was no suggestion of any cough.

I did not see him after this, but was informed that satisfactory arrangements were made with the father to allow him to study law, and I believe his somatic symptoms subsided.

CASE OF G.M.

G.M. was adopted at 2 weeks, began to have eczema at 2 months, hives at 8 months, and asthmatic attacks at 16 months, during a very wet season. She had two attacks a week from April till the end of June, then was clear for six weeks, four of which were spent away from home in the mountains. Since the middle of August, 1945, she has had a mild daily wheeze with three severe attacks and has required frequent hypodermics of adrenalin. She was a patient of ours in 1945 at the age of 22 months.

The mother thought that the attacks during the last two months were partly emotional since they came especially at the end of the day, but possibly a fatigue factor was responsible. She had observed eczema or hives after certain foods and these were avoided. Her anxiety was not abated by the doctor saying that the asthma attacks would eventually give the child an enlarged heart and a barrel-shaped chest.

We were able to send the child home after three weeks in hospital, on a very respectable diet including a number of foods which had been considered bad for her. In the ward we were rather astonished at the moroseness of the child; she was entirely unresponsive till the latter part of her stay when she began to respond a little. I pointed out to the mother the dangers of overprotection on her part. I gave a favourable prognosis as regards the allergic aspect. Undoubtedly one was dealing here with a very allergic child who had suffered from atopic eczema, urticaria and asthmatic attacks. It was necessary to steer between Scylla and Charybdis. An adequate diet had been arrived at by adding one new food at a time, and this process was to be continued at home. Tests with dog hair showed 3 plus and no pets were allowed. House dust precautions were to be taken, as well as avoidance of exposure to pyrethrum (in insecticides) and tobacco smoke. Judgment on the pollens was reserved, though ragweed was a possibility in view of the positive test and the fact that she had an exacerbation of asthma during the ragweed season.

Since going home the mother reports that at first she was gloomy and subdued, with bad temper tantrums. On adding orange juice to the diet, mild asthma was rather more frequent, but she is very much better in other ways, looks 100% improved and her temper is better and she is easier to handle.

CASE OF W.J.M.

Mrs. W.J.M., a woman of 47, was seen in November, 1945, because of severe asthma attacks which began in June, 1944, immediately following the death of her only child. She had been in hospital with status asthmaticus and had nearly died. After six weeks she was sent home to find that her husband an alcoholic, had brought another woman into the house. From May until August she was again in hospital because of generalized exfoliative dermatitis complicated by extensive ulceration about the vulva, perianal area and the ears, which was considered to be due to drug sensitization—barbiturates or aminophyllin given for the severe asthma. With this skin condition she lost all her hair and nails, but during this three months period she was entirely free of asthma.

She showed an eosinophilia of 16%. Her tests were singularly negative as one might expect from this history; but she had had nasal polyps removed shortly before the asthmatic attacks began, and this would strongly suggest an allergic background, as might the 16% eosinophilia, except that this might be accounted for by the skin condition. She also had a white blood count of 18,000 and an increased sedimentation rate (27 c.v.). There were other psychic shocks in this case which in the words of the dermatologist may well have been an important factor in "broadening the allergic base".

Our interpretation of this case was that it was one of "intrinsic asthma", due not to identifiable external or extrinsic causes but to intrinsic causes possibly of a bacterial nature, in which a state of allergic equilibrium was broken down by psychic trauma and severe asthma precipitated. That she is an allergic individual is attested to by the severe dermatitis which supervened as a sensitization phenomenon to drugs, as well as by the history of nasal polypi and the blood eosinophilia.

CONCLUSION

In conclusion, one cannot too emphatically repudiate the misleading suggestion that bronchial asthma should be considered as a psychical disorder. I believe that it should be conceived of primarily as an organic disease based on disturbed respiratory physiology — the result of allergic influences, in which psychic and emotional factors may indeed be important in precipitating, modifying or inhibiting attacks in patients already the subjects of asthma. Only in rare instances would the disease appear to be originally psychogenic, and even then careful search will usually reveal that a state of allergic equilibrium has been upset by the psychic trauma. There probably are some patients who consciously or unconsciously utilize their disease to excuse their deficiencies, and even to achieve their ends.

In the case of children, the attitude of the mother is of real importance. Much wisdom and restraint is called for. Certainly overprotection and apprehension is most unwise and may serve

as a "trigger mechanism" through suggestion. The physician should see to it that while important considerations are not lost sight of, neither should the idea be inculcated in the child that he is a potential invalid and therefore to be wrapped up in cotton-wool. A little healthy neglect may even be preferable to oversolicitude.

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MYELOFIBROSIS

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MYELOFIBROSIS is a condition in which the blood-forming elements of the bone marrow are replaced by fibrous tissue. This results in varying degrees of extramedullary myeloid metaplasia and a leuko-erythroblastic anæmia. It may be focal or generalized, and it may or may not be associated with endosteal bone proliferation (osteosclerosis). The etiology is unknown. A similar blood picture occurs in many conditions where the bone marrow has been replaced as in osteopetrosis,[1, 2] primary tumours of the bone marrow,[3] tumour metastases to the bone marrow, the xanthomatoses[4] and poisons such as benzene[5] and fluorine.[6]

The clinical and pathological findings of myelofibrosis were first described by Heuch[7] in 1879 and a number of cases were described later in the German and American literature under different names. The actual number is said to be under 200.[8] The term "myelofibrosis" was first used by Mettier and Rusk[9] in 1937. The various synonyms under which this condition has been known are given in the classical papers on the subject by Erf and Herbut,[8] and Rosenthal and Erf.[2]

It is a disease of adults affecting both sexes equally. Clinically, it is characterized by an insidious onset of aching pains in the long bones for which no definite cause can be found. The symptoms of pallor, dyspnœa on exertion and fatigue appear next. In the beginning physical examination may be normal, but as the disease advances lymph glands are found to be enlarged and the liver and spleen become palpable. The blood picture shows a hypochromic anæmia with immature red cells in the blood stream. There may be a moderate increase in the total number of white blood cells in the beginning but as the condition progresses a leukopenia appears. There is a marked polymorphonuclear shift to the left as far as the myelocytes. This combination of an anæmia with immature red cells and the leukemoid blood reaction was first referred to as a leuko-erythroblastic anæmia by Vaughan.[10] On sternal puncture the bone marrow is aspirated with difficulty. The marrow juice is of a definitely hypoplastic type. A bone marrow biopsy is necessary to confirm the diagnosis. The anæmia is refractory to all known methods of treatment. Once the symptoms and signs are well established the course is usually rapidly downhill. The enlargement of the lymph glands, spleen and liver, which is due to an extramedullary myeloid metaplasia, becomes more pronounced and the anæmia progressively worse. The termination is due to gradual exhaustion and intercurrent infection.

The pathological anatomy consists of characteristic bone marrow changes with widespread extramedullary myeloid metaplasia. The bones involved include all those containing active hæmatopoietic marrow. The predominant feature in the bone marrow is a disappearance of the blood-forming elements and replacement by varying amounts of fibrous tissue. The proliferating fibroblasts may be arranged in whorls and strands with a few islands of active hæmatopoietic tissue scattered throughout. The endosteal bone may be found to have undergone some local or general proliferation with encroachment on the marrow cavity. This is termed "osteosclerosis".

The extramedullary myeloid metaplasia appears to be compensatory and occurs predominantly in the liver and spleen, both of which organs are markedly enlarged and firmer than normal. The hæmatopoietic activity occurs in discrete and confluent areas in both organs. The sinusoids of the liver, splenic pulp and

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splenic sinusoids contain clumps of immature blood cells of both the leukocytic and erythrocytic series. Extramedullary myeloid metaplasia may also occur in other tissues, such as lymph nodes, pancreas and intra-abdominal fatty tissue.

PRESENTATION OF CASES

The first of the two cases presented is typical of myelofibrosis. The second case is one in which the history, clinical course and the blood findings were similar to those of myelofibrosis but was proved to be a case of diffuse lymphosarcoma.

CASE 1

This 41-year old male motor mechanic had a history of complaints which started in October of 1941 while he was serving in the Royal Canadian Navy. He had repeated admissions to hospitals, the last one in January of 1945 when he died. In retrospect his complaints must have been due to the same disease process demonstrated at the autopsy. Different diagnoses were made at the time of his various hospitalizations but it was only on his last admission that the correct diagnosis was made from the history, blood picture and findings on bone marrow aspirations. A bone biopsy was not done.

He was first admitted to the Royal Victoria Hospital on August 12, 1942, with a history of aching pains in his right foot radiating up into the lateral side of the leg. This was markedly increased on standing. He first noted this pain in October of 1941 when his ankle had been strapped because of an injury diagnosed as a sprain. Since its onset the pain had become gradually more severe and in April of 1942 he was given Pavex treatment at a military hospital but with only slight relief. While on convalescent leave the pain in his right foot and leg recurred with increased severity and an aching pain also appeared in the left foot and leg. He was, therefore, admitted for investigation. His family history was non-contributory. He had an appendectomy in 1929 and an operation for duodenal ulcer in 1936. Except for the above complaints his functional enquiry was negative.

The physical examination was essentially negative except for small varicosities on both legs and absent pulsations of both dorsalis pedis arteries. The skin temperature readings were slightly decreased. A diagnosis of early Buerger's disease was made and he was discharged and referred back to a Service hospital.

On October 6, 1944 he was readmitted to the Royal Victoria Hospital. Since his last admission he had been discharged from the Navy because of a persistent aching pain in both legs with increasing weakness. Until about 3 months before his admission he had been able to work but then noted a gradually increasing feeling of general malaise, weakness, easy fatigue and irritability. His appetite decreased, he lost 13 pounds in weight, and noted a gradual loss in colour. He became dyspnœic on exertion and had definite swelling of his ankles after standing.

Physical examination.—The patient was a well developed male showing evidence of recent loss in weight and pallor. He did not appear acutely ill. The temperature was 99.2°, and the pulse rate 92, the respirations 20 and the blood pressure 128/85. There were palpable, small, firm lymph nodes in both anterior cervical and inguinal regions. The spleen was definitely felt and the liver extended 4 cm. below the costal margin. Examination of the fundi revealed a few cotton wool plaques in the right eye and small splinterlike hæmorrhages in the left eye.

Special examinations.—The urine was always found to be normal. The blood Wassermann and Kahn were negative. A lumbar puncture revealed normal cerebrospinal fluid with no increase in pressure. The Wassermann reaction and Lang curve were normal. The blood sugar, cholesterol and non-protein nitrogen were normal. The total serum protein was 6.05 gm. %. The albumin was 4.31 gm. % and the globulin 1.74 gm. %. The skin brucellergin and tuberculin tests were negative. The liver function tests showed normal bromsulphalein excretion but the hippuric acid synthesis was moderately depressed. The x-ray examination of the long bones and pelvis demonstrated no abnormalities. A barium meal showed a contracted duodenal cap with some retention of barium suggesting an ulcer crater. Two blood cultures were negative.

An inguinal lymph node was removed and on sectioning showed a catarrhal lymphadenitis. The cytological elements of the medullary cords were similar to those of Hodgkin's disease but no definite diagnosis of a specific disease could be made from the sections of this gland.

The hæmogram (Table I) showed a marked hypochromic anæmia. There was a definite alteration in the size and shape of the red blood cells with many large forms and ovalocytes. Numerous erythroblasts normoblasts and more mature cells showing stippling, and approximately 3% reticulocytes were seen in the smear. The differential count suggested a leukemoid reaction.

Number and Date	*Hæmoglobin*	*Red blood cells in millions*	*White blood cells in thousands*	*Platelets in thousands*	*Normoblasts (per 100 W.B.C.)*	*Myeloblasts*	*Promyelocytes*	*Myelocytes*	*Metamyelocytes*	*Stab. cells*	*Polymorphonuclear normal segmented*	*Polymorphonuclear hypersegmented*	*Eosinophiles*	*Mast cells*	*Lymphocytes L & S*	*Monocytes*
CASE No. 1	%					%	%	%	%	%	%	%	%	%	%	%
Oct. 10, 1944	35	2.0	5.1	170	2	1	–	12	15	20	33	1	1	6	5 & 1	5
Nov. 4, 1944	–	–	5.1	–	–	–	3	11	8	13	33	1	3	3	8 & 13	4
Nov. 11, 1944	–	–	5.0	–	–	1	2	10	7	14	34	–	3	–	13 & 12	4
Dec. 8, 1944	22	–	8.0	–	–	–	–	3	13	18	25	–	7	3	7 & 24	–
Dec. 15, 1944	16	–	6.4	–	–	–	2	5	6	14	30	–	8	2	8 & 19	6
Jan. 9, 1945	32	1.7	8.0	–	–	–	–	5	6	4	24	–	19	7	11 & 18	4
CASE No. 2																
Mar. 15, 1945	72	4.8	8.3	160	–	1	7	10	14	28	6	–	7	–	9 & 18	–
Mar. 31, 1945	38	2.8	5.2	180	–	–	–	13	18	18	17	–	–	–	14 & 12	8
April 12, 1945	43	2.2	5.5	–	–	–	–	9	9	15	23	–	3	–	7 & 30	3
April 20, 1945	36	1.9	3.4	–	–	13	6	19	18	3	2	–	1	–	15 & 20	3

There was a marked shift of the polymorphonuclear cells to the left as far as the myeloblast series, with increase in the mast cells and a reduction in the lymphocyte and monocyte total. The coagulogram was normal except for a slightly prolonged prothrombin time. Aspiration of the sternal bone marrow showed a definitely hypoplastic type of marrow. Repeated study of the blood during this admission demonstrated no marked change in the differential picture except for a slowly increasing eosinophilia which rose to a high of 18%.

His progress in hospital was steadily downward. He ran a remittent temperature during his entire stay in hospital, rising to 102 to 104° in the afternoons. Penicillin therapy was started and a total of 1,700,000 units given without any change in the temperature. A trial of sulfadiazine was also unsuccessful. The hæmoglobin slowly decreased, necessitating a total of eight 500 c.c. transfusions. At one time his hæmoglobin dropped to 16% but investigation never revealed any evidence of hæmorrhage. Massive doses of iron and intramuscular injections of liver extracts produced no response.

His only complaints were marked weakness and mild aching pain in his legs easily controlled by salicylates. The pulse rate remained elevated and on two occasions he suffered from brief attacks of tachycardia when he complained of slight dizziness. The lymph nodes, liver and spleen gradually increased in size. The rise in temperature in the afternoon was always associated with an increase in the aching pains in his legs. On December 24, 1944 he was allowed home for the Christmas holidays.

On January 5, 1945 he was again re-admitted. During his brief visit home he remained in bed and felt extremely weak. The aching pain in his legs persisted. On January 3 he began to complain of abdominal pain associated with vomiting. Shortly after this he complained of considerable dyspnœa. On examination he appeared to be in considerable distress suffering from marked air hunger. The respirations were rapid and heaving. The percussion note was impaired at both bases posteriorly and on auscultation many coarse râles were heard over the whole chest with fine, moist râles at both bases. The pulse rate was 128 per minute and the blood pressure 110/50. The heart was markedly enlarged to the left, the sounds faint and a gallop rhythm was present. Otherwise, the examination was as before. The differential blood count was similar to that on his previous admission except for a definite increase in the eosinophiles and basophiles. The urine showed one plus albumin and many granular casts. A roentgenogram of the chest revealed gross enlargement of the heart with passive congestion of both lung fields.

Despite two transfusions, oxygen and penicillin therapy, his condition rapidly deteriorated and he died on January 17, 1945 approximately three and one-half years from the onset of his early symptoms.

Summary of findings at necropsy.—The body was that of a well developed, undernourished, white male and was extremely pale. There were no pigmented areas on the skin and the hair was of the normal male distribution. There were palpable lymp glands in the axillæ and inguinal regions which were discrete and of a rubbery consistency.

The heart weighed 455 gm. and the myocardium was extremely pale. The valve orifices and leaflets were normal. The coronary arteries had a minimal degree of arteriosclerosis at their orifices, but were patent throughout their entire course. There were a few fibrous pleural adhesions over the apices and the diaphragmatic surfaces of both lungs. The right lung weighed 1,314 gm. and the left lung 1,120 gm. The apices were firm and rubbery, the remainder of the lungs appeared less firm than the upper lobes. On sectioning there were mottled areas in the apices. The lower lobes of both lungs showed evidence of scattered consolidation. The peribronchial and mediastinal lymph nodes were enlarged and firm.

The liver extended 2.5 cm. below the costal margin and weighed 3,041 gm. The cut surface was a uniform pale colour. The pancreas weighed 134 gm. and its cut surface was pale. The spleen weighed 1,000 gm. and extended 25 cm. below the left costal margin. It was of a firm consistency and dark red in colour. The cut surface did not show any evidence of follicles but there were many bright yellow areas of varying sizes surrounded by zones of hyperæmia. The adrenals each weighed 9 gm. and one-half of the right adrenal was ivory-white in colour. The right kidney weighed 183 gm. and the left 181 gm. There was a small, greyish area on the cortex of the left kidney which, on cross section, resembled a healing infarct.

The bone marrow of the lumbar vertebræ, sternum and ribs was of a very pale, light brown colour. The bone marrow from the upper end of the shaft of the femur contained only fat. There were no gross abnormalities in the skeletal system. The brain and its coverings appeared normal.

Microscopic description. — The bone marrow from the ribs, sternum and lumbar vertebræ (Fig. 1) all showed the same changes. There was a very extensive replacement of the marrow tissue by proliferating fibrous tissue.

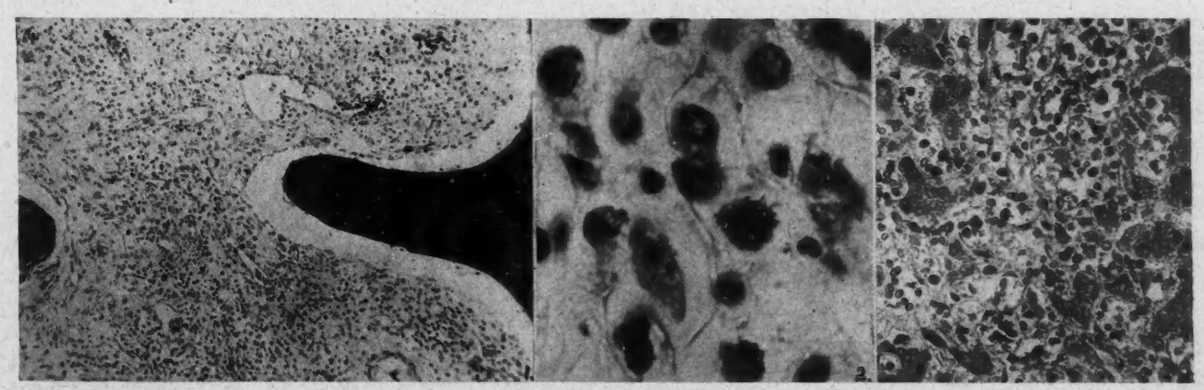

Fig. 1.—The bone marrow from a lumbar vertebra in Case 1. The normal hæmatopoietic tissue is largely replaced by fibrous tissue. There are a few areas of hæmatopoietic cells scattered about. Note the absence of both fat and endosteal bone proliferation. X 111. **Fig. 2.**—A high power field of an area of hæmatopoietic tissue from Fig. 1. It shows a few granulocytes and erythrocytes in early stages of development. There are a few large vesicular fibroblasts in the section. X 1,270. **Fig. 3.**—The liver in Case 1. The sinusoids contain predominantly myelocytes and an occasional cell of the erythrocytic series. The liver cells show some degree of degeneration. X 340.

Hæmatopoietic cells were scattered sparsely in some areas, more prevalent in the vertebral marrow. The cell types were normoblasts and erythroblasts in small numbers. There were many eosinophilic myelocytes and mature eosinophiles (Fig. 2) demonstrated by Custer's staining method. There were some myeloblasts present, a moderate number of lymphocytes and an occasional plasma cell. There was no evidence of proliferation of endosteal bone suggestive of osteosclerosis.

The liver architecture was preserved but there were small areas of necrosis of the liver cells in the central zone of the lobules. The sinusoids contained many hæmatopoietic cells which were chiefly granulocytic, the most frequent type being eosinophilic myelocytes and promyelocytes (Fig. 3). Some more mature neutrophilic cells were also present. There were no cells of the erythropoietic series seen but an occasional megakaryocyte was present. The portal areas contained a few eosinophilic myelocytes. There were numbers of macrophages containing golden brown pigment scattered throughout the area of necrosis in the liver lobules.

The speen showed a marked increase in the cellularity of the pulp which separated widely the trabeculæ and Malpighian corpuscles. The pulp contained a large number of hæmatopoietic cells of the primitive type. Eosinophilic myelocytes and promyelocytes were again the most prominent findings but a few immature neutrophils, megakaryocytes, and mature granulocytes were also present. Only occasional cells of the erythropoietic series were seen. There was also a large amount of iron containing pigment deposited in the spleen.

The adrenals showed areas of infarction with organized thrombi present in some of the central areas. The connective tissue around the adrenals contained some clusters of immature white blood cells similar to those seen in the spleen and liver. The left kidney had a small infarct and there were immature blood cells present in the perirenal fat. The inguinal and other lymph nodes contained hæmatopoietic cells of the same type as the liver and spleen. These cells tended to obliterate the sinusoids and lymph follicles. The upper lobes of the lungs had their alveolar spaces filled with an exudate consisting chiefly of fluid, fibrin and disintegrating leukocytes of both the lymphocytic and granulocytic series.

CASE 2

This 47-year old white female was admitted to the Royal Victoria Hospital on March 14, 1945 with a history of gradual onset of tiredness and dyspnœa on exertion since November of 1944. At that time she noticed a slight pain in the left side anteriorly of her chest. Ordinary housework, which she had previously performed with ease, was done with increasing effort. On February 21, 1945, she suffered from a sudden, severe attack of sharp, knife-like pain in both legs which lasted about 30 minutes. Ever since that time there has been a dull, aching pain present which extended to involve the arms, legs, back and all the joints of the body. At the same time she noticed a feeling of chilliness followed by a feeling of increased temperature and night sweats. On March 1 she had remained in bed because of her marked weakness. She complained of numbness of her face and the pain in the long bones increased markedly. Her bones were tender on pressure. A "throbbing" headache was constantly present. About a weak before admission small, pinpoint, purpuric spots appeared on both extremities but gradually faded and no fresh crop appeared. A few days later she noticed considerable dizziness even while lying in bed. Since the onset of her illness there had been a definite weight loss and marked loss of colour. The only drug she had taken was aspirin to relieve the pain in her legs.

The past history revealed that she had measles, chicken pox and scarlet fever as a child followed by a chronically discharging left ear. She had pneumonia twice, the last time 16 years ago. For several years she had a cough productive of a moderate amount of yellowish sputum which on occasion had been tinged with blood.

Physical examination.—The temperature was 99°, pulse 92, respirations 22. She was well developed but poorly nourished showing definite evidence of recent loss of weight, and she appeared ill. She was pale and the skin over her extremities showed fading purpuric spots. The left ear drum was perforated and some purulent discharge was present in the external canal. There were small, palpable, shotty and firm glands present in the right submaxillary region and both the axillary and inguinal regions. The breath sounds were harsh on both sides of the chest and the expiratory phase was prolonged. The blood pressure was 130/90. The liver edge was palpable 2 cm. below the costal margin. The spleen was enlarged and its firm edge was about 3 cm. below the costal margin. There was definite tenderness over all the long bones and the sternum.

Special examinations.—The urine was normal except for a trace of albumin. No Bence-Jones proteins were found. A roentgenogram of the chest showed a questionable enlarged gland of the left hilus. A roentgenogram of the right leg and pelvis showed no evidence of gross bone disease. The blood Wassermann and Kahn were both negative. The basal metabolic rate was plus 55%. The blood uric acid, creatinine, nonprotein nitrogen, total proteins, calcium and inorganic phosphorus were normal. The bilirubin direct was 0.2 mgm. % and total 0.4 mgm. %. An endocrine assay of urine showed low 17-ketosteroid excretion. The electrocardiogram showed minimal slurring of the QRS complexes. Cephalin flocculation test was three plus in 24 hours and three plus in 48 hours. Bromsulphalein excretion was 5.6%. A hæmogram showed a moderate degree of hypochromic anæmia (Table 1), increased fragility of red blood cells with many nucleated forms of the normoblastic series. The white blood cells were moderately increased showing a marked shift of the polymorphonuclears toward immature forms as far as the promyelocyte stage. There was slight eosinophilia, lymphocytosis and a moderately increased sedimentation rate. The Rumpel-Leede test was positive and the platelet count was slightly decreased. The picture was, therefore, leuko-erythroblastic in type and leukemoid suggesting a myelophthisic process. On bone marrow puncture aspiration the marrow fluid was very difficult to withdraw, coagulated rapidly and was definitely hypoplastic.

Repeated hæmograms showed a gradual marked reduction in hæmoglobin and red cell count. The total white cell count decreased to 3,400 and the neutrophiles showed a left shift as far as the myeloblastic stage, suggesting greater activity of the leukemoid process.

Her course in hospital was rapidly downward. The temperature remained elevated during her entire stay. The lymph glands, spleen and liver increased rapidly in size. Her pallor became more pronounced. Marked weakness was present and during her last week she suffered from increasing dyspnœa. Examination of the chest revealed many rhonchi throughout both sides with evidence of fluid at both bases. The aching pain in her long bones persisted. Her condition rapidly deteriorated and she died on April 25, 1945.

Summary of findings at necropsy.—The body was that of a well developed, rather emaciated, white female. The skin was pale and there was slight pitting œdema over the lower extremities. The hair was of the normal female distribution. The superficial lymph nodes were small, firm and palpable in the submandibular, axillary and inguinal regions.

The thyroid gland weighed only 8 gm. but appeared grossly normal. The pericardial cavity contained about 75 c.c. of amber coloured fluid and the heart weighed 280 gm. No gross lesions of the myocardium, endocardium or valves were present. The coronary arteries were patent throughout. The right pleural cavity contained 100 c.c. and the left 400 c.c. of clear straw coloured fluid. There were extensive dense pleural adhesions over both lungs. The lungs showed nothing unusual except some evidence of passive hyperæmia. The right lung weighed 470 gm. and the left 480 gm. The hilar and mediastinal lymph nodes were enlarged and on cross section were of a patchy white and red colour.

The liver weighed 2,055 gm. and extended 1.5 cm. below the right costal margin. There was a grey area measuring 5 by 2 cm. and 2 mm. in depth on the mid-portion of the anterior surface of the right lobe of the liver. The cut surface of the liver appeared normal in colour and consistency. The pancreas weighed 60 gm. and appeared normal on section. The spleen weighed 925 gm. and extended 1.5 cm. below the left costal margin. It was brownish-red in colour and firm in consistency. The cut surface showed a haziness of the outline of the Malpighian corpuscles. The adrenals weighed 9 gm. and 6 gm. for the right and left respectively and appeared normal in the gross examination. The right kidney weighed 180 gm. and the left 235 gm. Both kidneys had irregular external surfaces which on cross section showed circumscribed patches of various size, of yellowish-white tissue. There was normal kidney tissue between the areas.

The bone marrow of the vertebral bodies was of a pale brown appearance. The marrow cavity of the upper end of the right femur was replaced by yellowish dense fibrous tissue. The abdominal and pelvic lymph nodes were enlarged and palpable as were the superficial inguinal lymph nodes. The brain and its coverings were normal.

Microscopic examination.—The superficial and deep lymph nodes all showed invasion and replacement of the normal lymphoid structure by darkly staining lymphocytes, among which were scattered larger, paler staining lymphocytic cells. The bone marrow of the vertebræ (Fig. 4), sternum and femur all showed varying degrees of invasion by lymphocytic tissue and replacement of the hæmatopoietic tissue (Fig. 5). The proportion of myeloid and erythropoietic activity was greater in the vertebræ than in the other bones examined. The liver architecture was fairly well preserved but there were many immature red cells, namely normoblasts and erythroblasts, white blood cells, myeloblasts and neutrophilic myelocytes in the sinusoids (Fig. 6). One section of the liver had a discrete area of lymphocytic cell invasion which in the gross was the grey "scarred" area. The spleen had its lymphoid tissue reduced and the red pulp was extremely œdematous and cellular. There were many immature cells of both the leukocytic and erythrocytic series, the former predominated and many appeared to be myeloblasts.

Varying degrees of lymphocytic infiltration were found in the heart, aorta (adventitia), lungs, gastro-intestinal tract, pancreas, adrenals, kidneys, uterus, ovaries, pituitary and dura mater. Incidental findings were patchy atelectasis of lungs; œdema of lungs; numerous, small, extramural and subserous fibromyomata of the uterus; and two chromophobe adenomata of the pituitary.

Anatomic diagnoses included lymphosarcoma of lymph nodes, bone marrow, heart, aorta,

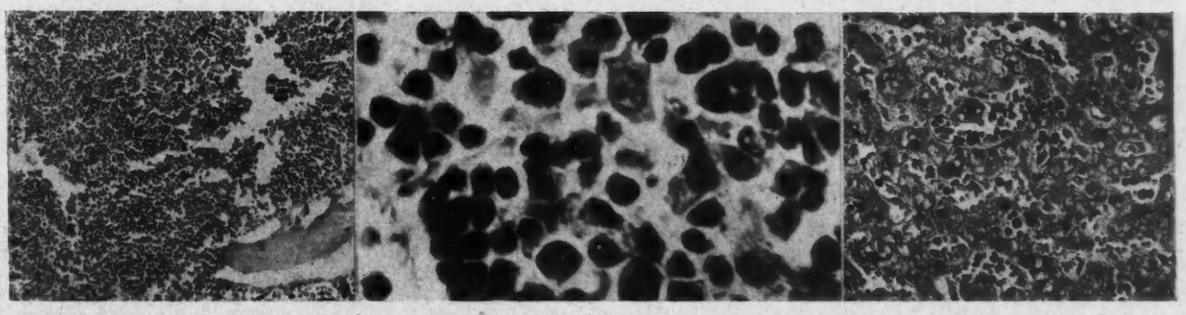

Fig. 4.—The bone marrow from a lumbar vertebra in Case 2. The normal hæmatopoietic tissue is invaded and in many areas replaced by lymphocytic cells. X 125. **Fig. 5.**—A high power field of Fig. 4. The small darkly staining cells arranged in clusters are lymphocytic cells. There are some larger cells of the myelocytic and erythrocytic series seen in the section. X 1,450. **Fig. 6.**—The liver in Case 2. The sinusoids are dilated and contain immature cells of both the granulocytic and erythrocytic series. The columns of liver cells are well preserved. X 280.

lungs, gastro-intestinal tract, liver, pancreas, adrenals, kidneys, uterus, ovaries, pituitary and dura mater; extramedullary myeloid metaplasia in liver and spleen; hepatomegaly; splenomegaly; œdema of lungs; bilateral hydrothoraces; patchy atelectasis of lungs; fibrous adhesions of pleura and adenomata of pituitary.

DISCUSSION

The first case presented is a typical case of myelofibrosis. In summary the history is that of the insidious onset of vague, indefinite pains in the legs associated with general weakness for which, at the beginning, no adequate explanation could be discovered. As the disease advanced the lymph glands, liver and spleen were found to be enlarged. A hypochromic, erythroblastic anæmia appeared and slowly progressed despite all known treatment. The white blood cell total was reduced and the differential count showed a shift to the left of the leukemoid type. The sternal bone marrow was aspirated with difficulty and was markedly hypoplastic. Once the symptoms and signs were definitely established the progress to a fatal termination was rapid. The actual cause of death was exhaustion with a terminal lobar pneumonia. The post mortem examination showed a diffuse fibrosis of the hæmatopoietic bone marrow and marked evidence of extramedullary myeloid metaplasia. All these features are characteristic of diffuse myelofibrosis.

The etiology of this disease is unknown though various causes have been incriminated in the past. The history of this patient revealed no definite evidence of exposure to any toxic agent such as "fluorine"[6] or benzene[5] which have been reported to cause osteosclerosis and a leukemoid blood picture. There were no symptoms, signs or roentgenological findings of primary or secondary disease of the bones. The pathological examination showed no evidence of Paget's disease, in which the cortex of the bone is increased in thicknes, encroaching upon the marrow which shows varying degrees of fibrosis. There was no evidence of osteitis fibrosa cystica or Albright's disease.[4] Neither primary bone marrow tumours nor metastatic tumours were found. Gardner[12] suggests that one factor in the etiology is excessive œstrogens. Although no endocrine assays were done on this patient there was no clinical evidence of endocrine imbalance and the endocrine glands appeared normal on pathological examination. The patient had not been exposed to any radio-active substances which has been reported by Martland[13] to cause fibrosis of the bone marrow. There is, therefore, nothing in this case to indicate the nature of the etiology of myelofibrosis.

The chief clinical manifestation was the refractory leuko-erythroblastic anæmia which was caused by the progressive fibrous displacement of the bone marrow. The aching pain in the legs and long bones is difficult to explain but is probably related to the same process. The marked evidence of extramedullary myeloid metaplasia appears to be compensatory to the marrow displacement. An interesting feature in this case was the marked eosinophilia in the blood stream and the predominance of eosinophilic myelocytes in the active hæmatopoietic tissue.

There is no known specific treatment for myelofibrosis. Testosterone has been used to prevent the effect on the marrow of œstrogen which Gardner[12] believes might be a factor in the etiology of fibrosis of the bone marrow. The results of this treatment in Erf's[8] series are not conclusive. In general, treatment is purely symptomatic and supportive. Transfusions should be given when indicated but great care must be taken to insure compatibility of the blood used. Radiation therapy is definitely contra-indicated.

The second case is presented because of the almost identical clinical picture to myelofibrosis but due to replacement of the bone marrow by a lymphosarcoma. The duration of the illness was only 6 months as compared to 3½ years. The complaints and the findings of a refractory leuko-erythroblastic anæmia, a hypoplastic marrow and marked evidence of extramedullary myeloid metaplasia were similar to the first case. Pathological examination showed a diffuse lymphosarcoma replacing the hæmatopoietic bone marrow. This is the common feature in the pathological process of the two cases. It, therefore, seems logical to conclude that the clinical syndrome of pain in the long bones and fever associated with a leuko-erythroblastic anæmia, enlargement of the lymph glands, liver and spleen is due to the replacement of the active hæmatopoietic bone marrow. A bone marrow biopsy, as previously emphasized by Erf, should be done to confirm the

diagnosis in every case showing the above syndrome.

SUMMARY

1. Diffuse myelofibrosis as a clinical and pathological entity has been described and a typical case has been presented.

2. A case of diffuse lymphosarcoma which gave a similar clinical picture has been presented.

3. The clinical syndrome of pain in the long bones and fever associated with a leuko-erythroblastic anæmia, enlargement of the lymph glands, liver and spleen is due to replacement of the hæmatopoietic bone marrow.

4. No specific treatment is known.

5. The importance of a bone marrow biopsy to confirm the exact diagnosis is emphasized.

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I do not know what I may appear to the world; but to myself I seem to have been only a boy playing on the seashore, and diverting myself in now and then finding a smooth pebble or a prettier shell than ordinary whilst the great ocean of truth lay all undiscovered before me.—Isaac Newton.

DEVELOPMENT OF AN ANASTOMOSIS BETWEEN THE CORONARY VESSELS AND A TRANSPLANTED INTERNAL MAMMARY ARTERY*

By Arthur Martin Vineberg, M.D.

Montreal

DURING the past twenty-five years many attempts have been made to increase impaired coronary circulation. Numerous operative procedures have been devised. Most of these basically consist of suturing a vascular structure to the ventricle wall. Beck in 1935 sutured the pectoral muscle to the left ventricle and O'Shaughnessy in 1937 grafted the great omentum on to the left ventricle. More recently, 1940, Fauteux attempted to improve ventricular wall circulation by ligation of the vena magna cordis.

The problem has been approached by transplanting the left internal mammary artery directly into the left ventricular wall.

METHOD

Basically the method described below for the development of an extra coronary circulation consists of transplanting the internal mammary artery directly into the left ventricular wall. This was done in dogs in three different ways designated as experiments types A, B, C.

Experiment type "A" (6 dogs).—The internal mammary artery is tied at its distal end between two ligatures and cut. The free end is drawn through a previously prepared tunnel in the wall of the left ventricle and fixed in this position.

Experiment type "B" (7 dogs).—The internal mammary artery is not cut but freed from its bed in its central portion. A slit is made in the wall of the left ventricle and the artery slung into the wound where it is held by a free pleural graft or by sutures.

Experiment type "C".—The left coronary sinus and anterior descending branch of the left coronary artery are tied. The internal mammary artery is sutured into the wall of the ventricle as in Experiment "B".

* This work was assisted by a grant-in-aid from the Division of Medical Research of the National Research Council, and was done in the Department of Physiology, McGill University, and in the Department of Surgery, Royal Victoria Hospital, Montreal.

RESULTS

Experiment type B.—Six animals of experiment type "B" have been autopsied. None showed the development of a collateral circulation. The internal mammary artery was found to have its lumen completely occluded by fibrous tissue. This occurred only at the site of transplantation into the wall of the left ventricle. The lumen of the artery proximally and distally to the site of transplantation remained patent.

Experiment type C.—In this group no animals have as yet been autopsied.

Fig. 1.—X-ray showing radio-opaque solution filling the left coronary system after injection into the transplanted left internal mammary artery.

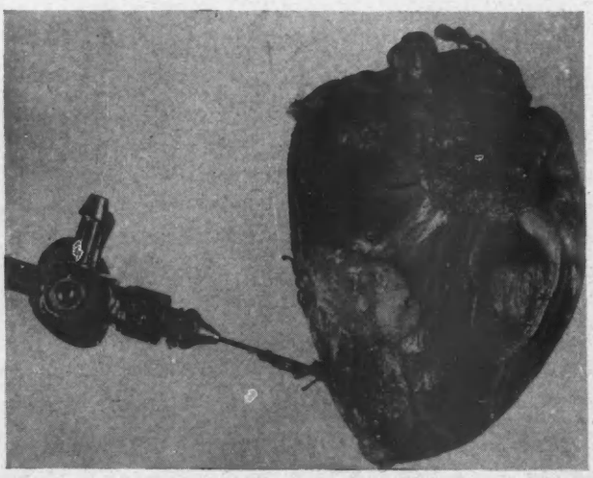

Fig. 2.—Photograph of heart after injection of the transplanted internal mammary artery. Note that the vessels of the left ventricle are turgid and full of the injection fluid, whereas the vessels of the right ventricle are empty and collapsed.

Experiment type A.—Dogs in this group were sacrificed at different periods, in which equivocal results were obtained but in the last of these there appeared to be a definite anastomosis. Details of this dog are herewith reported.

Dog. No. 8 operated upon February 8, 1946. Killed June 14, 1946. The dog was bled to death and the internal mammary artery injected with pink Schlesinger's solution (fluid). The injection was done with the heart *in situ* and with the internal mammary artery dissected from the chest wall but still attached to the left ventricle. As the injection progressed, the pink Schlesinger's solution could be traced flowing through the ramifications of the left coronary artery. The flow was from apex to base. A large quantity of solution was injected without distending the vessels. Upon removing the heart from the chest, it was found that the left ventricle and aorta contained the injected solution. The injected solution obviously reached the aorta through the coronary orifice. In order to keep the radio-opaque injected fluid within the coronary vessels, it was necessary to tie off the left coronary artery at the sinus of Valsalva. The accompanying figures show the distribution of the injection fluid and a section of the internal mammary artery lying in the wall of the left ventricle. It will be noted that the artery is patent and that there is only moderate fibrous intimal thickening. The manner of anastomosis between the two vessels, it is hoped, will be demonstrated microscopically by serial sections which are now in the process of being made.

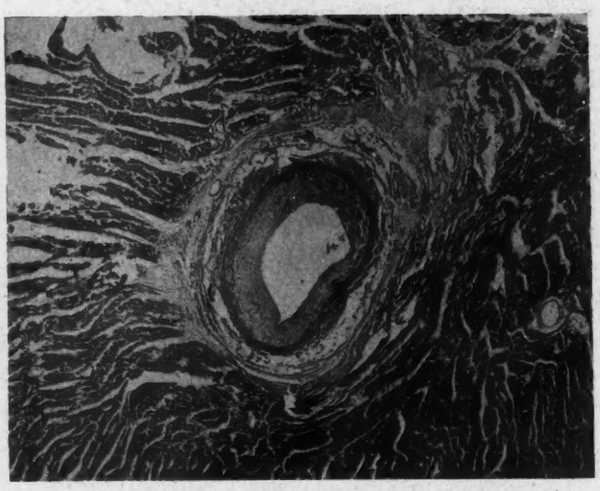

Fig. 3.—Low-power view of microscopical section taken through the ventricular wall at site of internal mammary transplantation. Note patent internal mammary artery lying within ventricular muscle with only moderate thickening of intimal walls.

DISCUSSION

This preliminary report is published in order to record the fact that the internal mammary artery when transplanted into the left ventricle of the heart according to the technique described, develops anastomotic channels with the left coronary circulation after an adequate period of time. This fact has been demonstrated by the free flow of injection fluid from the cannulated internal mammary artery into the branches of the left coronary artery. It is recognized that the manner of the development of these anastomoses is not clarified in this report. Further studies by injection and serial sections are now being conducted.

CONCLUSION

The left internal mammary artery when transplanted into the wall of the left ventricle formed an anastomosis with the left coronary artery system after four months.

Thanks are due to Dr. M. Gertler and Mr. T. Ritchie for their valuable assistance.

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CYSTS OF THE GENITAL DUCTS, MÜLLERIAN AND WOLFFIAN

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Department of Urology, Royal Victoria Hospital, Montreal

IT is generally agreed that congenital anomalies are common in the genito-urinary system, yet very little can be found in the literature about cysts of the genital ducts. We have recently encountered three such cases on our service, and because of their unusual interest we are reporting them.

Retrovesical and subtrigonal cysts in the male are classified as Müllerian duct cysts. They are all remnants of the Müllerian duct which opens into the utricle of the prostate, and therefore occur only in the male. One subtrigonal cyst in our series occurred in a female, and from an embryological standpoint must be categorized as a Wolffian duct cyst. Clinically the cysts in the male simulate vesical obstruction; in the female, bladder symptoms and persistent pyuria.

CASE 1

A.B., male, aged 9 years: admitted April 28, 1941, with the following symptoms. Vomiting, abdominal pain, dysuria, difficulty in voiding, fever and rapid pulse. Physical examination essentially normal. Intravenous pyelography showed marked hydronephrosis and hydroureter, left. Non-functioning right kidney. At cystoscopy there was a large round mass on the left side of the bladder extending down to the vesical neck, causing obstruction and obscuring the left ureteral orifice. Operation: suprapubic cystotomy and excision of subtrigonal cyst. A large cystic mass was found in the region of the trigone, which when incised appeared to consist of several smaller cysts. These extended up under the mucous membrane of the posterior surface of the bladder, and did not involve the ureteral orifices. Cystic areas were completely excised. Pezzer catheter inserted. Pyelo-nephritis occurred during convalescence but yielded readily to chemotherapy. Cystoscopy previous to discharge from hospital showed an inflamed mucosa and some slough on the floor of the bladder. No obstruction present at vesical neck. Left kidney normal.

CASE 2

J.D., male, aged 72 years: this case having been previously reported only a brief synopsis will be given here.

Admitted May 6, 1943. Complaint, acute retention. The history, physical examination and laboratory findings were consistent with those found in an ordinary case of prostatism with retention. The salient features, however, were those demonstrated by the barium enema and fluoroscopy. A persistent mass was seen filling the pelvis and displacing the rectum and sigmoid markedly to the right. The bladder seemed to lie anterior to the

Fig. 1. (Case 1).—Preoperative. Intravenous pyelography. Note marked dilatation of left ureter and pelvis. **Fig. 2.** (Case 1).—Postoperative. Marked regression of hydroureter and hydronephrosis, left. **Fig. 3.** (Case 2).—Barium enema. The subtrigonal mass is displacing the rectum to the right. **Fig. 4.** (Case 2).—Cystogram shows bladder to be lying anteriorly in almost normal position.

mass. May 14, 1943. Suprapubic cystotomy with evacuation of subtrigonal cyst. November 30, 1943, readmitted because of aggravation of symptoms. December 3, 1943, patient was transferred to the service of Dr. Gavin Miller, who performed a radical excision of the cyst. A large cyst was found filling the pelvis and adherent to the rectum and bladder. The cyst was freed from adhesions. The greatest difficulty was encountered in freeing it from the trigone, where it was fixed but not incorporated. It would appear that the whole cyst was removed. On the fourth postoperative day the patient developed bronchopneumonia, from which he succumbed on December 11, 1943. Autopsy was not granted.

CASE 3

C.G., female, aged 3½ years: complaints; painful micturition, 2 months; pyuria and dysuria; hæmaturia, two days 1941-42. At the age of ten months patient had an attack of pyuria and painful micturition with complete recovery. She had a similar attack with hæmaturia last winter. General physical examination was essentially negative. Cystoscopy revealed a plum-sized elevation on the right side of the trigone displacing the ureteral orifice laterally. Indigo carmine injected intravenously showed no accessory ureteral orifices. Both ureters catheterized. The specimen from the right kidney contained pus ++; left was normal. Retrograde and intravenous pyelograms revealed a normal left kidney, but a hydronephrotic right kidney. Cystogram showed a filling defect to the right side of base of bladder. No other abnormality noted. Operation; excision of cyst of trigone. Midline suprapubic incision, bladder opened at vault. To the right side of trigone was a spherical body with a wide pedicle the size of a blue plum. About 30 c.c. cloudy fluid was aspirated from the cyst. Cyst excised level with floor of bladder. Usual closure of bladder; about F. 30 Pezzer catheter. Convalescence was uneventful and intravenous pyelogram six months later revealed a normal urinary tract.

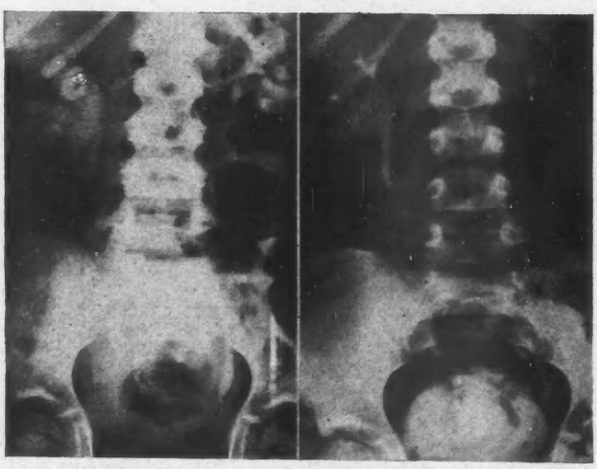

Fig. 5. (Case 3).—Preoperative. Intravenous pyelography. Marked hydronephrosis, right. **Fig. 6.** (Case 3).—Postoperative. Same patient 6 months later. Right pelvis practically normal.

EMBRYOLOGY

The genital and urinary systems are very intimately associated in their evolution. They originate from mesoderm. In the early fetus there is present both male and female characteristics, that is Müllerian and Wolffian ducts. In the embryo of the third month the sex is already established and the ducts of the opposite sex are atrophying.

Fate of the Müllerian ducts: the two ducts meet and fuse to form the uterus and vagina, whereas in the male embryo they disappear. The utricle in the prostate in the adult is the only remnant of their embryonic existence.

Fate of the Wolffian ducts: they form the epididymis, vas deferens and ejaculatory duct. The seminal vesicles, ureters and collecting tubules also arise from the Wolffian ducts which open at each side of the prostatic utricle. In the female embryo the Wolffian ducts run towards the body of the uterus and disappear by the third month. Occasionally, however, remnants of the distal parts of the ducts persist. Their openings are sometimes in the vulva or vagina.

Congenital anomalies, arrested development and non-obliteration of the remnants of ducts are inseparable. When the Müllerian duct persists in the male it gives rise to a subtrigonal cyst because of its close relation to the bladder.

Eight cases of Müllerian duct cysts have been reported in the literature, to these we add the two male cases in our series. A review of the literature does not reveal any subtrigonal cysts occurring in the females.

Professor C. P. Martin, Department of Anatomy, McGill University,[5] in explaining the origin of pelvic cysts, states that "when the upper part of the urogenital sinus dilates to form the bladder it takes up the Wolffian duct at a short distance from the sinus, and when this taking up process reaches the opening of the ureter, it proceeds to take up the lower end of the ureter also, but does not proceed further along the Wolffian duct itself. Thus it comes about that the openings of the ureters and the Wolffian ducts are separated by a considerable distance. While this taking up process is going on the Wolffian duct makes a considerable loop downwards, and the ventral or ascending limb of this loop is actually in the posterior wall of the urogenital sinus.[4] Later on, the anterior and ventral wall of this loop disappears and the duct opens into the sinus at a much lower level. But if the ventral wall of the ascending limb persisted over a considerable area, it would give rise to a cyst. This, I think, may indeed have been the origin of many cysts, usually described as cysts of the Müllerian ducts."

We believe that the female case in our series is a Wolffian duct cyst, and had its origin as

here detailed. Wesson and Voelker speak also of the Wolffian ducts as being the origin of subtrigonal cysts in males.

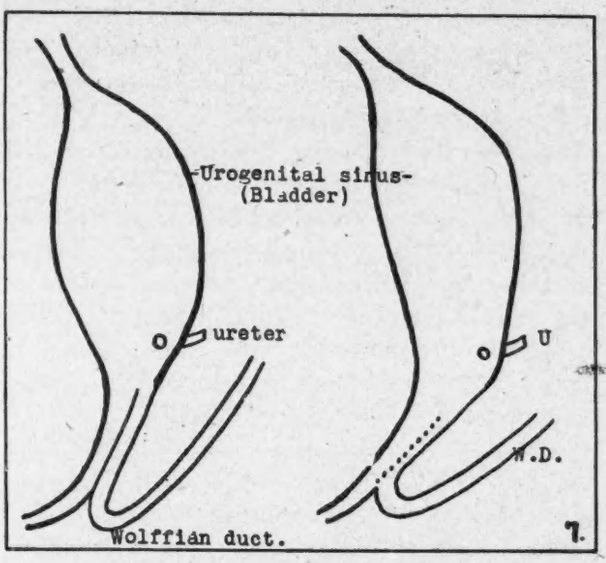

Fig. 7.—Formation of bladder. The two diagrams show the change of level of the entry of the Wolffian duct. The W.D. originally opens near the ureter, it then folds down in a loop, fusing in front with epithelial wall of the sinus, so that it runs up embedded in this. The second diagram shows (dotted lines) the epithelium giving way leaving the duct opening lower down. But if the ventral wall of the ascending limb persisted over a considerable area, it could give rise to a cyst.

(From Fraser's *Embryology*, Fig. 259.)

Coppridge[1] states that only eight cases of subtrigonal cysts have been reported in the literature. The most recent reported cases of Müllerian duct cysts are those of Coppridge, Hennessy, and Campbell. Coppridge's case was diagnosed after operative procedure was instituted, which consisted of partial excision and fulguration of the remainder of the sac. Hennessy[2] reported a case of symmetrical midline tumour in a man 36 years of age with symptoms of bladder obstruction. Abdominal exploration revealed the mass to be firmly attached to the bladder wall posteriorly. The case reported by Campbell[3] was traced to the prostatic utricle. There have been other cases reported as cysts of the seminal vesicle, cysts of the prostate and urethra, which we believe cannot be included as cysts of the Müllerian ducts. All of the cases of subtrigonal cysts reported in the literature have failed to reveal any case of Wolffian duct cyst in a female. We therefore believe that our case is unique. The only reference to Wolffian duct is made by Wesson and Voelker,[6, 7] who hint at the origin of cystic, prostatic, and vesical cysts from both Müllerian and Wolffian remnants.

DIAGNOSIS

This is based on the symptomatology, cystoscopy, cystogram, intravenous pyelography, and barium enema. The symptoms are usually those of bladder neck obstruction. There is frequency, dysuria, and urgency. The subvesical tumour may occasionally be large enough to cause urinary retention. In the male the mass is usually symmetrical whereas in the female it may lie more on one or other side of the midline. The Wolffian ducts are lateral to the Müllerian ducts which fuse in the midline. Visualization of the upper urinary tract may reveal dilatation of the ureter and pelvis, either unilateral or bilateral. These cysts should be differentiated from ureterocele, and prostatism with bladder symptoms. Cysts of the seminal vesicle nearly always contain spermatozoa.

TREATMENT

Radical excision of as much of the cyst as possible. Total removal of the sac will be found difficult because of the incorporation of the cyst in the bladder wall. Suprapubic cystotomy seems to be the easiest approach. Intraperitoneal abdominal operations are equally unsuccessful in the complete eradication of the sac. Some authors resort to fulguration of the remnants of cysts. In the literature reviewed there were no recurrences.

SUMMARY AND CONCLUSIONS

Three cases of subvesical cysts are reported, two in the male, one in the female.

The male cases are Müllerian duct cysts. The female case is, from an embryological standpoint, a Wolffian duct cyst.

Pelvic tumours and symptoms of urinary obstruction should make one think of cysts of the genital ducts. They should be differentiated from a ureterocele and prostatism.

The treatment consists of the excision of as much of the cyst as possible.

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RECESSIVE EPIDERMOLYSIS BULLOSA

By R. D. Roach, M.D., M.R.C.P.

Moncton, N.B.

EPIDERMOLYSIS bullosa, or acantholysis bullosa, is a rare disease. It is said to occur as either an hereditary or an acquired condition. As it may be inherited as a recessive quality, it would seem difficult to be sure that cases are of an acquired type. However, in the sense that it must arise some time as a mutation of genes, there is a time in the past history of the affected families when it was truly acquired.

The group of clinical conditions classed under the dermatological terminology of epidermolysis bullosa probably includes a number of closely allied pathogenic states, differing somewhat in their clinical features and also in the mechanism of their genetic origin.

There appears to be a simplex type, which is dominant, and a dystrophic type, which occurs in either a dominant or a recessive form. The characteristic feature of the disease in all types is an abnormal fragility of the skin so that it is easily damaged with minimal trauma or indeed undergoes destructive changes without any apparent trauma. This latter type is especially seen in the dystrophic cases. Various theories have been advanced to explain this abnormality, mainly from the pathologic findings. In many, but not in all cases there is an absence of elastic tissue. Some observers believe there is an hereditary defect in the cutaneous blood vessels which leads to œdema of the cutaneous cells and the formation of bullæ. Others consider that some metabolic error gives rise to the condition.

In the simplex types, the lesions consist of bullæ which tend to rupture leaving raw superficial ulcers. In many of these cases, the superficial ulcerations heal without scarring or with thin soft scars. This type tends to occur in childhood and, at least in some cases, improves or disappears with age. In these simplex cases, the general growth and nutrition is usually unaffected and dystrophic and mucosal lesions are not present.

In the dystrophic forms, there is a dominant type in which the general growth and nutrition is usually good. These cases, in addition to the cutaneous bullæ, may show dystrophies of the nails, hyperkeratosis of the plantar and palmar areas, or both. They practically all show mucosal lesions which heal with scarring or sometimes with patches of leukoplakia. Some of these patients also show epidermal cysts near the scars. In this dominant, dystrophic type, the outlook as to the duration of life is apparently unaffected.

In the rare, recessive, dystrophic forms, the ones who live are usually undersized and their general nutrition may be affected, probably in part due to the difficulty at times in taking certain foods because of the mucosal lesions in the mouth, pharynx, and œsophagus. In some cases the intelligence is subnormal. The dystrophies may include malformation or maldevelopment of the maxillæ, absence or loss of the nails, and secondary changes of a dystrophic type in the extremities, which become gradually deformed by repeated ulceration and reparative scar formation. Various mucous membranes may be involved in the dystrophies such as those of the lips, mouth, pharynx, œsophagus, anus, and vagina. Marked and moderately deep scarring is a characteristic of this group. Many sub-groups have been described, due to some unusual features in the particular cases. Herlitz gave the name of "Epidermolysis bullosa hereditaria fetalis" to one group in which all the cases died in the first few days after birth.

In the recessive dystrophic type of this disease, the mortality in the whole group is extremely high and it is very exceptional for those affected with the disease to reach adult life. Most of them die in infancy or early childhood. As most of the lesions occur in non-vital structures, it is possible that, in some cases, the high mortality is due to infection through the denuded areas before the children have had time to build up an effective protective mechanism. This, however, cannot be the whole explanation as many of the dominant dystrophic cases have similar lesions and their expectation of life is usually good.

CASE REPORT

The patient to be described was first seen on October 22, 1944. She was a girl of 15 years of age. The mother stated that she had not been normal since birth. At birth, or shortly after, it was noticed that the skin was denuded in certain areas of the body. As the baby got older, blisters would keep forming on various parts of the body but especially on the extremities. Individual blebs would break with the formation of ulcers and these would slowly heal with scar formation. The finger nails and the toe nails appeared normal at birth. As

time went on and, the mother thinks, in a period of about one year, all the nails were lost. It was also noticed that the same type of lesions, which were present on the skin, kept forming and healing in the mucous membranes of the mouth. The child developed slowly in spite of the wide-spread lesions. She appeared to be alert mentally and walked at three years of age. She was able to attend school for part of two terms but the constant attention required for the care of the skin and the difficulty in walking comfortably for any distance prevented further attendance.

As time went on, the continual breaking down and healing of the bullous lesions led to marked scarring with apparent web formation between the fingers and toes. The girl had been in continual difficulty with eating on account of the ulceration in the mouth and sensitive soggy gums.

As will be seen in the pictures, the girl presented a remarkable appearance. At fifteen years of age, she was obviously under-developed. She was 4 feet 4½ inches tall and weighed 48 pounds. There were widespread ulcerations on the skin. These were most marked on the hands, feet, wrists, around the axillary folds, and on the forehead and the face. In the hands, all the nails were gone and there was slight contracture of the fingers. The interdigital spaces, on both hands, were webbed nearly down to the proximal inter-phalangeal joints. The left toes were completely webbed and the right ones webbed except for a shallow cleft between the big toe and the adjoining one. In spite of these lesions, the girl walked fairly well and showed considerable dexterity in the use of her hands, in such manœuvres as dressing and tying her shoe laces.

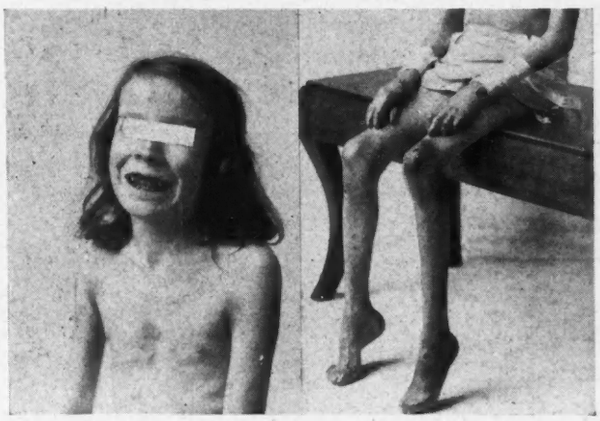

Fig. 1.—The photographs show the widespread lesions involving the skin, the deformities of the dental arches and teeth, and the apparent webbing of the toes and fingers.

On examination of the mouth, there appeared to be some flattening of the dental arches, especially of the maxilla, with irregularity and deformity of the teeth. The gums were swollen, soggy, and cyanosed. The mucous membranes over the gums and the inner sides of the cheeks showed several fairly large areas of superficial ulcerations and multiple scars of healed ulcers. The hair was rather thin but appeared to be normal in texture. No axillary or pubic hair was present and the girl had never menstruated. She appeared of average intelligence considering her lack of education.

The mother told of similar cases of the same disease which had occurred in her own children and among the children of her brother and of her uncle. The patient was the only one with the disease who lived beyond infancy.

The members of these affected families live in rural New Brunswick. The two families concerned have lived in the same district for several generations and have intermarried frequently amongst themselves. The marriage of first cousins seems to have been the rule rather than the exception. The progenitor of one of the families came from Wales and that of the other from Ireland. The unaffected members of these families, with the exception of one large family

Fig. 2.—The x-rays show the apparent webbing of the toes and fingers due to dystrophic changes in the skin and the atrophic changes in the terminal phalanges of both the fingers and toes.

in the present generation, have been generally healthy and have lived to old age.

The family has been traced through six generations in one line and through five generations in the other and no cases of this disease were known of until the last two generations. The parents of the affected children, in both generations, were themselves unaffected by the disease and were apparently normal and healthy.

Fig. 3 shows a schema of the genealogy of the two families involved (L and O) with a third family name (T) occurring in the second recorded generation on the one side and in the first recorded generation on the other. These two women were sisters. All the sibs of the diseased children are included in their particular families. In the schema, the successive generations are in the appearance of their levels from top to bottom. The males are represented by squares and the females by circles. The black squares and circles represent members of the families who are definitely known to have been affected with epidermolysis bullosa. Children of those families who died in infancy are shown by a subtended cross.

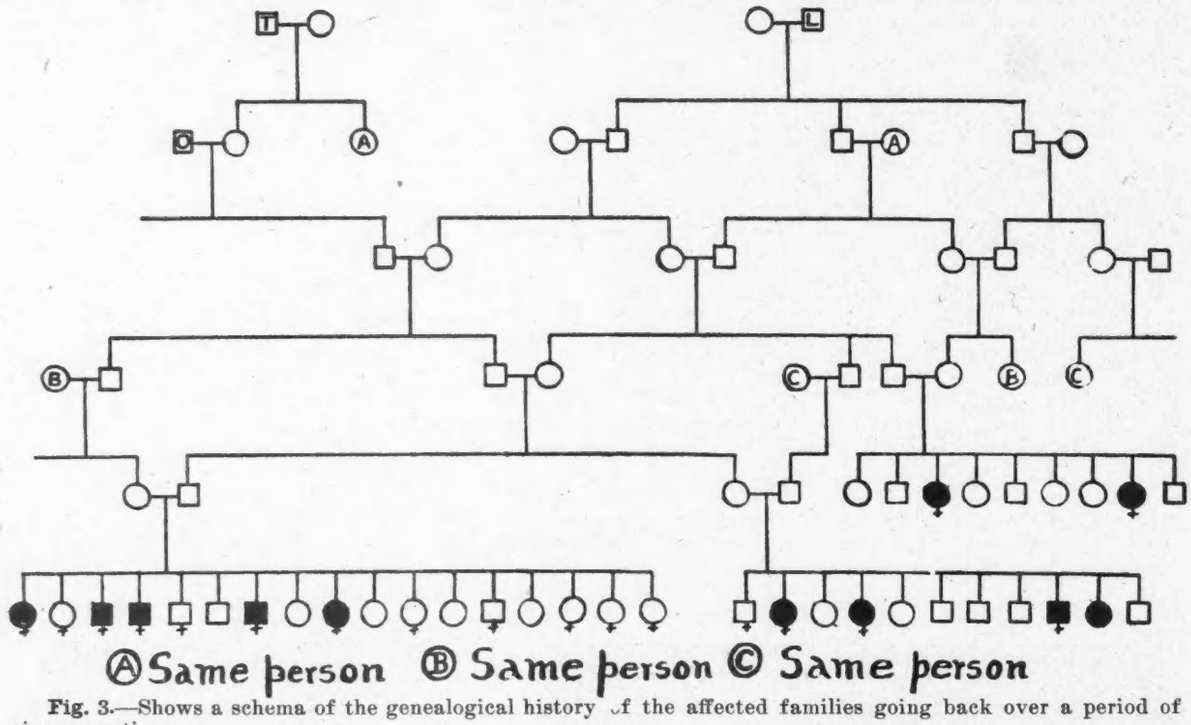

Fig. 3.—Shows a schema of the genealogical history of the affected families going back over a period of six generations.

These rare familial or hereditary conditions are not only interesting in themselves as clinical material but are of great interest and importance to students of heredity and genetics. Although this is a complicated subject and its study, in many cases, involves the use of statistical mathematics, according to Cockayne, Roberts, Snyder, and others, an outline of the principle methods of inheritance seems to be as follows: There are three main types of inheritance as quoted from Cockayne:

1. "The abnormality is met with in one or more sibs but very seldom in either their parents or in their children and is said to be familial. This is the recessive type.

2. "The abnormality is transmitted by direct descent from the affected members of a family to some of their children, who in turn transmit, and so it passes from one generation to another in an unbroken line but the normal children do not transmit it and it does not reappear in their descendents. Such abnormalities are said to be hereditary and illustrate the dominant type.

3. "In this group the inheritance follows Nasse's law and, being transmitted by apparently normal females, affects some of the male members of the family.

"However in all groups there is a direct and unbroken transmission of the genes responsible for the abnormalities belonging to all three groups though the abnormalities in the first and third groups may not appear for many generations.

"Corresponding genes in corresponding chromosomes may be alike or one may govern one character and the other a different character which is alternative to it and is known as an allelomorph. If a zygote receives the same gene from each germ cell, the individual from it is said to be homozygous for that gene but, if the zygote receives two different genes, which are allelomorphs, the individual produced is said to be heterozygous for that particular gene. In the former, all the germ cells will be alike in that they all carry the same gene but, in the latter, half will carry the one gene and half will carry its allelomorph. If an individual homozygous for a gene marries another who is homozygous for its allelomorph, all the children will be heterozygous, having received one gene from one parent and the corresponding gene or allelomorph from the other and, if the two

genes both produced an equal effect, the children will be intermediate between the parents in respect of the character produced. Such an even balance between two genes is, however, very unusual and as a rule one completely or almost completely overcomes the effect of the other and the character determined by it is known as a dominant while that produced by its allelomorph, when in the homozygous state, is known as a recessive."

Also in the study of these conditions, one must consider the relationship of the abnormal genes to the sex chomosome genes. As stated by Snyder:

"There are three kinds of hereditary behaviour associated with the sex chromosome. Genes found only on the X-chromosome are sex-linked; genes found only on the Y-chromosome would produce traits only in males and these traits would be handed from an affected father to all his sons. Genes found on both the X- and the Y-chromosomes would be 'incompletely sex-linked'."

In addition, one has to take into account a process known as "crossing over". This is explained by Snyder as follows:

"Since genes are carried on chromosomes and since there are so many pairs of genes and so few pairs of chromosomes, it is clear that many pairs of genes must be carried on each pair of chromosomes. The pairs of genes carried on one pair of chromosomes are said to be linked. As a result of linkage, whenever one gene on a chromosome goes into hereditary transmission, the other genes on that chromosome must go too, with certain exceptions. The exceptions are those cases in which the two members of a pair of chromosomes exchange homologous parts (and thus blocks of genes) during reduction division. The occasional exchange is known as 'crossing over'. . . ."

In the case of a recessive gene, incompletely sex-linked, Synder goes on to say:

"Again we must search for crossing over between the X- and Y-chromosomes of heterozygous males. In recessive inheritance, however, the parents and grandparents of affected individuals will usually be normal so that we cannot tell whether a heterozygous male received the gene from his father or from his mother. Nevertheless, some families will yield too many affected males and normal females, while others will yield the reverse. The procedure in analyzing recessive incomplete sex-linkage is much more difficult than in dominant incomplete sex-linkage. In spite of this, five recessive genes have provided good evidence for being inherited on the homologous portions of the sex chromosomes, that is, of being incompletely sex-linked. These are total colour-blindness, xeroderma pigmentosum, Oguchi's disease, recessive epidermolysis bullosa, and retinitis pigmentosa of one type."

In the series of cases here reported in three families, there were definitely ten other children who have died of this disease in infancy. Several of the children died when a few days old, others lived to between two and three years of age. Of the total of eleven cases, seven were girls and four were boys. In the three families, the total number of sibs was thirty-seven.

In a table given by Cockayne from collected statistics, the ratio of affected to unaffected in a total of 126 sibships was 1: 2.5. In the total sibships in the three affected families reported in this series, the ratio of affected to unaffected was 1: 2.4, and the ratio of affected boys to affected girls was 1: 1.75.

Although the exact method of the inheritance of these rare familial diseases is a subject for study by expert geneticists using the science of statistical analysis, it would seem that the cases described fall in the group of recessive epidermolysis bullosa which is usually inherited as an incompletely sex-linked recessive hereditary quality. For further study of these cases, the data concerning the family history has been collected as accurately as possible.

SUMMARY

1. A case of recessive dystrophic epidermolysis bullosa in a girl of fifteen years of age is presented.

2. Ten other children, in three related family groups, with apparently the same disease have died in infancy.

3. A schema of the genealogical history of these families goes back as far as six generations.

My sincere thanks are due to Dr. H. L. Mellish, Petitcodiac, N.B., who recognized the case as one of unusual interest and referred her to me; to Dr. D. S. Lewis, Montreal, for his helpful interest; to Professor C. L. Huskins, formerly of McGill University, now of the University of Wisconsin; to Mr. W. B. McAdams who did the photography; and finally to members of the affected families and others who co-operated in reconstructing the family tree.

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Falsehood is so utterly vile that though it should praise the great works of God it offends His divinity; truth is of such excellence that if it praise the meanest things they become ennobled. Without doubt truth stands to falsehood in the relation of light to darkness, and truth is in itself of such excellence that even when it treats humble and lowly matters it yet immeasurably outweighs the sophistries and falsehoods which are spread out over great and high-sounding discourses; for though we have set up falsehood as a fifth element in our mental state it yet remains that the truth of things is the chief food of all finer intellects—though not indeed of wandering wits.—Leonardo Da Vinci.

A GALLERY OF CASES

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[*The following cases have been selected from a large collection of photographs in the possession of Dr. Smith. They speak for themselves, and apart from the explanatory legends no other comment is required.*—EDITOR.]

Fig. 1.—Vesicular then pustular dermatitis: a drug eruption excited in a girl with asthma by gr. 3 potassium iodide given thrice daily. Until this was discovered, the case was suspected to have smallpox (alastrim). **Fig. 2.**—Gargoylism: punch-like facies; protuberant eyeballs; widely-set eyes; right outward and upward squint, downward and outward slanting palpebral fissures; rosacea of forehead, cheeks, nose and chin; stumpy, deformed thumbs; all other fingers webbed, fused together and deformed. This patient was a constant reader, unusually intelligent; and she had monocular vision, reading with one eye at a time. In the same way, she gazed at one, bird-like, turning her head from side to side to look, first with one eye, then with the other. **Fig. 3.**—Granuloma pyogenicum (formerly named botryomycosis hominis): the small growth was mulberry-like, soft, and bled readily. Staphylococci teemed in it. The mass was removed by curette, the base being then touched with phenol liquefactum. **Fig. 4.**—Dermatitis artefacta: done intentionally by the girl herself, probably with the finger wetted with saliva; she was left-handed. It is unusual to find a girl disfigure her face in this kind of case.

Fig. 5.—Granuloma pyogenicum: soft, fleshy, mulberry-like growth which bled readily, and in which was found the *Treponema pallidum*. **Fig. 6.**—Female, aged 14 years: a linear nævus. No mark at birth. The growth was first noticed at 9½ years of age. Now, it is 6 inches long, ½ inch at its widest. Surface hard and warty, pigmented grey-black in colour. Whole growth is freely movable on the underlying tissues. Excised, stained sections show the usual epithelial warty structure. No other stigmata. **Fig. 7.**—Alopecia areata in a schoolboy; a large single patch, in a nervous pupil suffering some anxiety at school. **Fig. 8.**—Rapidly growing mixed sarcoma of the chest wall, fifteen weeks after biopsy had confirmed the diagnosis. Being inoperable, answering to no treatment, the rapid, extensive growth destroyed the patient soon after the date the photo was taken. **Fig. 9.**—White syphilitic scarring with brown pigmentation surrounding, after healing of ulcerating gummata on the forearm.

ACUTE SUPPURATIVE VENTRICULITIS SECONDARY TO BRAIN ABSCESS WITH RECOVERY*

By David W. Pratt, M.D., F.A.C.S.

Toronto

THE uniformly disastrous outcome following the rupture of a brain abscess into the ventricular system is too well known to the neurological surgeon to require much further comment. Suffice it to say that all medical and surgical effort has been directed toward the prevention of just such an eventuality. All too often has one been delighted with the apparently favourable progress of a drained brain abscess only to have this heretofore invariably fatal catastrophe ensue.

The first precept in the treatment of this type of abscess consists in maintaining the individual under careful observation, avoiding at all costs premature surgical interference. This entails waiting for the length of time required for an adequate walling-off process. Operative interference before this encapsulation is adequate serves merely to add trauma to the inflammatory process already present, resulting frequently in a hopeless, direct extension of the suppurative encephalitic state.

It is accepted that the minimum time required for the development of an adequate defensive "capsule" is at least two weeks from the invasive stage. Where at all possible the period of waiting should be considerably longer. From four to six weeks is regarded as optimal. This period of "masterly inactivity" is not without grave risk, of course, and the most meticulous attention must be paid to the observation of the patient during this phase, so that the most favourable time for interference may be selected. The possibility of the abscess bursting into the ventricular system during this time must be borne in mind. It has been all too often the unhappy experience of the neurological surgeon, during this period of waiting or subsequent to drainage, to have the dread syndrome of ventricular invasion supervene. This invasion usually manifests itself by the rapid onset of unconsciousness, the development of hyperthermia, stiffness of the neck, positive Brudzinski and Kernig tests, along with a polymorphonucleosis of the cerebrospinal fluid. Death ensues within a very few hours, the result of the sudden flooding of the ventricular system with the overwhelming purulent contents of the abscess.

The two cases herewith reported, I feel, are of extraordinary interest in that they illustrate certain features of importance from a clinical and therapeutic standpoint and that they both made an excellent recovery. I believe therefore, that they are unprecedented.

CASE 1

This sixteen year old male (V.R.) was admitted to the medical service of St. Michael's Hospital, Toronto, on February 4, 1939. He had been in his usual state of health until about January 7, when he developed an acute naso-pharyngitis. This was followed in three or four days by the development of left frontal headache, which progressed in severity and rapidly became constant to the point of preventing sleep. It was aggravated by coughing, sneezing and straining at stool. It was present upon awakening. After attempting to do his work for the next three days, despite malaise and the development of unsteadiness in his gait, he was put to bed where he remained until admitted to hospital. One week prior to admission he noticed numbness in the right arm and leg followed two days later by blurring vision and photophobia. On February 2 he began to have projectile vomiting. There was no history of a chill.

There was little of interest in his past history except that he had suffered from bilateral, discharging ears since early childhood and had complained of intermittent generalized headaches for some years.

On admission he looked extremely ill, and was drowsy, though easily roused. He was mentally confused and repeatedly put his hand to his left frontal and temporal regions. His temperature was 100° F., pulse 48, respiration 22, and blood pressure 130/80. He was right-handed.

General physical examination showed nothing of significance with the exception of chronic, bilateral suppurative otitis media with evidence of a recent acute exacerbation on the left side; there was no mastoid tenderness.

The scalp and cranium showed no tenderness or contour change; no alteration of percussion note.

Cranial nerves.—(1) Normal. (2) Vision bilaterally poor. There was no gross visual field defect. Perimetric fields were not done owing to lack of co-operation. Ophthalmoscopic examination showed a papillœdema of three diopters of both eyes. The retinal veins were markedly overfilled. There were no hæmorrhages. (3), (4), (5) and (6) were all essentially normal. (7) There was a definite right lower facial paresis. (8) His hearing was reduced in both ears, these showing the bilateral, chronic, otitis media referred to, with the acute exacerbation in the left. The hearing was less acute in the left ear. There was some dizziness complained of but no tinnitus. There was no nystagmus. (9), (10), (11) and (12) no abnormalities.

The neck was stiff; Brudzinski's sign was present. There was general right sided paresis in upper and lower limbs but no sensory changes. Co-ordination was good. All reflexes were present and normal in degree, except that on the right the abdominals were more easily elicited than on the left and the right knee jerks were increased. There were no pathological reflexes.

Topographical examination of the brain by lobes.—Frontal, no disposition change other than that noted in present illness. Pre-rolandic, no Jacksonianism. Right hemi-paresis as noted. Post-rolandic, subjective change as referred to. Parietal, stereognostic sense good. Occipital, no visual field defect on rough testing. No scintillating scotomata. Temporo-sphenoidal, no "dreamy

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states'', no aphasia, no uncinate fits, no gross visual field defect. Angular gyrus, no auditory hallucinations. Cerebellum, no signs of involvement other than the history of staggering at work.

A lumbar puncture was carried out on the medical service, revealing a pressure of 50 mm. of Hg. The fluid was clear and the cell count was 50 per c.mm. The cell type was predominantly lymphocytic. The Pandy test was positive. A diagnosis of brain abscess was made and the patient referred to the surgical service for treatment.

Skull plates were made but showed no pathological change; the pineal gland was not visualized. X-ray films of the mastoid process showed a second degree mastoiditis on the left. All the spaces were large and cloudy. The septa were still standing but the cells above and behind the antrum appeared to have broken down. An inflammatory process was traceable inwards well towards the tip of the petrous apex beneath the floor of the middle fossa.

It was felt that a period of careful observation might safely be considered. On February 5 his drowsiness had increased and on the next day he developed nominal aphasia and became exceedingly stuporous. The bradycardia persisted. The diagnosis of a left temporosphenoidal lobe abscess was felt to be established and immediate operation deemed mandatory owing to the alarmingly rapid progress of the picture.

At operation (February 6), a burr-hole was placed approximately one inch above the left ear. The subarachnoid space was sealed off by electro-coagulation and the leptomeninges incised. The brain abscess wall was found here immediately subjacent to the cortex. The wall was very firm. The burr-hole was enlarged to 1½ inches in diameter, and a cruciate incision in the dura made. The abscess wall was transected by the electrosurgical knife. Approximately 30 c.c. of foul, gray pus was evacuated. The cavity was carefully inspected for loculation or ''collar-button'' formation. The abscess ''capsule'' or wall was so dense that marsupialization was possible. It was therefore sutured to the dura mater and a fenestrated, soft rubber tube drain one-half inch in diameter was inserted to the bottom of the cavity and brought out at right angles to the cortex. A doughnut dressing was built up and the patient returned to the ward. A culture of the pus showed a growth of *Strep. hæmolyticus.*

His postoperative course at first was as anticipated. Within two days his aphasia, numbness and hemiparesis had disappeared. He was bright, co-operative and hungry. His temperature hovered about 100° F., pulse 68, respiration 20. The drain was gradually extruded and was removed on the 20th day. The abscess cavity everted to form the surface of a cerebral hernia, which as time went on, was gradually receding. His temperature quickly resumed the normal. The greatest care was taken to maintain the monoseptic character of the abscess. The otologists were considering mastoidotomy but films of the mastoid made on February 24, showed the process to be rapidly subsiding.

After some four weeks' time, a pale, bluish, almost translucent area was observed in the centre of the cerebral hernia. This was approximately 1.5 cm. in diameter, and would bulge on coughing. It was realized that this was the ependymal lining of the left lateral ventricle. The greatest caution was exercised to preclude its rupture, but it did so, spontaneously, on his 38th postoperative day. He became rapidly unconscious, and his temperature rose to 105° F., with a stiff neck and positive bilateral Kernig. The dressing was saturated with cerebrospinal fluid. It could be seen pouring from a pouting hole in the ependyma of the left lateral ventricle. A lumbar puncture showed a cell count of 9,800, and streptococci were recovered here on direct smear and by culture.

The ventricle was irrigated with normal saline, following this with an instillation of two ampoules of sulfapyridine (soludagenan). Full dosage of soludagenan intravenously was began giving the equivalent of 100 grains daily. Fluids were forced to 4,000 c.c. each twenty-four hours. The ventricular instillation was repeated daily, for the subsequent five days, when it was discontinued. The intravenous administration was continued for some two weeks' time. No penicillin was employed as this case occurred before penicillin was available. His favourable progress was uninterrupted and he was discharged from the hospital on September 20. The cerebral hernia had disappeared and the whole area was well healed over.

He has been followed in the out-patients' department from time to time and has remained well, with the exception of an occasional generalized epileptiform seizure. He is earning his livelihood as a salesman. The epilepsy is now completely controlled.

CASE 2

This was an eighteen year old male admitted to my care at St. Michael's Hospital, at midnight on June 10, 1945, being referred by Dr. A. M. Anderson, of Welland, Ontario.

The history showed that he had been in his usual health until March 29, 1945, when he developed what was assumed to be gastro-intestinal influenza. By April 2, a definite broncho-pneumonia, presumably of virus origin was evident. Sulfathiazole therapy was instituted. X-ray studies of his chest, one week later, showed definite improvement as did his clinical state. On April 16, a flare-up of fever was noted for which no explanation was ascertained. He continued to show an elevated temperature after this, ranging from 99.4 to 100° F. Clinical improvement, however, seemed progressive. On May 12, blood cultures were made which proved to be sterile. There was no evidence of typhoid or paratyphoid in the serological studies. On May 19 his chest was again x-rayed and found to be clear. His white blood count however was 12,500. On that day he developed a fever of 104° F., became delirious, and developed opisthotonus. There was at no time any history of a chill. A lumbar puncture showed a cell count of 3,625 per c.mm. and a positive globulin reaction was obtained. Smears and cultures of the cerebrospinal fluid were negative for organisms. Penicillin therapy (100,000 units intramuscularly daily) was begun, and on the following day was given intrathecally as well, owing to the cerebrospinal fluid cell count rising

to 29,100 per c.mm. By May 31 the cell count had dropped to 900 per c.mm., and on June 5 the penicillin therapy was discontinued. On June 6 it was observed that he was mentally confused and that he had developed a speech defect. Three days later he vomited and continued confused as to time and location. On June 10 he became lethargic, unco-operative, incontinent and vomited repeatedly. A lumbar puncture was again done revealing a cell count of 20 per c.mm. Queckenstedt test at that time showed a complete block, there being no rise of pressure in the lumbar needle on jugular compression.

On admission he looked very ill, and was so stuporous that he was virtually unconscious. He would react, however, to even very light stimulation. His temperature was 99° F., pulse 46, respirations 18 and regular in rhythm. His blood pressure was 110/80. He was right-handed. General physical examination revealed no changes of significance.

Studies directed to the central nervous system were productive of the following findings.

Mental status.—History of confusion as noted above. He was lightly unconscious. The scalp and cranium were essentially negative.

Cranial nerves.—(1) Not tested. (2) Papillœdema of two diopters observed in the left disc. The right was normal. His vision was not tested. (3), (4) and (6) The right pupil was extremely contracted while the left was considerably larger than mid-position. Both reacted to light. There was a divergent strabismus. Vertical and rotatory nystagmus was present. The other cranial nerves were intact insofar as their examination was permitted.

The neck was stiff and Brudzinski's sign was positive. The upper extremities were moved equally on pressure on the supra-orbital nerve, but the right arm showed marked hypertonicity. The reflexes were increased in the left arm: there was no Hoffmann reflex. The left abdominal reflexes were more active than the right. He was incontinent of urine.

The lower extremities showed equal movements on supraorbital stimulation. The reflexes were as follows:

TABLE

	Right	*Left*
Knee jerk	+	+++
Knee clonus	—	—
Ankle jerk	+	++
Ankle clonus	—	—
Oppenheim-Gordon	+	—
Arnold	—	+
Babinski	+	±
Kernig	+	+

Further findings were precluded by the patient's general state. Urinalysis was negative, and the white blood count was 12,500.

A clinical diagnosis of a metastatic brain abscess involving the left frontal lobe was made. It was decided to keep him under observation for a while if possible as the history forwarded to us pointed to a cerebral involvement of only five days' duration. Exact determination of the date of invasion was however impossible.

Early the following morning (June 11) his temperature rose rapidly to 103° F., and the depth of unconsciousness increased alarmingly. The opisthotonus and Kernigs had become more pronounced and it was feared that rupture of the suspected abscess into the left lateral ventricle had occurred. He was at once operated upon.

At operation a burr-hole was placed immediately above and just lateral to the left frontal sinus. The leptomeninges were coagulated electrically, sealing off the subarachnoid space. It was noted that there was no pulsation in the dura. A Cushing cannula was inserted and the frontal lobe explored in all directions until finally a bead of pus was aspirated from the neighbourhood of the tip of the anterior horn of the left lateral ventricle. The cannula was left *in situ*, while the burr-hole was enlarged to 1½ inches in diameter. A nasal speculum was then threaded over the cannula and inserted to the site from which the pus had been obtained. Examination of this area revealed it to be the site of an encephalitic process. Greyish, thin fluid, could be seen exuding into this area, obviously emanating from the anterior horn. The exploration was extended along the track whence the fluid was coming. This led into the ventricle. Twenty-five c.c. of thin, greyish-yellow fluid was aspirated at the end of which 10 c.c. of frank, grey, heavy pus was evacuated. This latter sank at once to the bottom of the vessel into which all the fluid was decanted from the markedly dilated ventricle. It was evident that we had encountered a brain abscess which had ruptured into the lateral ventricle producing a ventricular empyema. The ventricle was irrigated with normal saline. A soft, fenestrated rubber tube drain was inserted and 100,000 units of penicillin instilled. A doughnut dressing was applied and the patient returned to bed. Cultures of the pus yielded a micro-aerophilic streptococcus.

He was placed on a forced fluid intake of 3,000 c.c. daily. One million units of penicillin were given intramuscularly in divided dosage throughout each twenty-four hours. 100,000 units were instilled daily into the ventricle. The greatest care was exercised to maintain the monoseptic character of the infection. Soludagenan was given intravenously to the equivalent of 100 grains of sulfapyridine daily.

The day following operation he was much less stuporous and was somewhat irritative. By June 13 he had recovered consciousness and would talk intelligently in both English and Ukrainian. His pupils were equal and reacted to light and accommodation. He was using both arms and legs. The right positive Babinski remained until the sixth postoperative day. He continued to improve and by the fifth day after operation his temperature had returned to normal. The intramuscular dosage of penicillin was then reduced to one-half million units daily. The intraventricular instillation of 100,000 units each twenty-four hours was continued until his eighth postoperative day. He remained bright and co-operative and had had no headache since regaining consciousness. By this time his neurological signs and papillœdema had subsided. Nine days after operation the soludagenan therapy was abandoned. The penicillin was discontinued on the 20th day and the drainage tube, which had been gradually shortened, was removed. He was allowed up on July 10, *i.e.*, approximately one month after operation, and was discharged from hospital on his 30th postoperative day feeling well, with the exception of a slight weakness of the left hand grip. The power of this was progressively increasing.

He has returned to his work and is at present, nine months later, enjoying normal health.

DISCUSSION

We are of the opinion that in these cases, the administration of sulfapyridine is of great value. It is probable that sulfadiazine would be equally so. The first case is eloquent in regard to the virtue of the former alone. I am confident that, without it, the patient would not have survived. I rather regret that I did not confine the medication in the second case to penicillin alone. This might have proved instructive. It will have been observed that no sulfapyridine was given intraventricularly however, in this second case.

The possibility that the block which resulted in the internal hydrocephalus found in the second case could have been the result of a "coning" at the tentorial ring was considered, but there was no associated evidence of brain stem compression. It was felt more probable that this was the result of œdema about the aqueduct of Sylvius. The rôle which the lumbar puncture might have played in its production could not be ignored. It serves to re-emphasize the dangers associated with the carrying out of a lumbar puncture and Queckenstedt test in the presence of papillœdema or other evidence of increased intracranial pressure.

It is felt that the administration of penicillin is frequently inadequate in dosage and is often prematurely discontinued. We believe that large initial doses may be given and their employment should be continued for a considerable time after all clinical evidence of the inflammatory process has disappeared. We are aware that it does not appear to traverse the choroid plexus and thus enter the cerebrospinal fluid but we believe from observation on other cases of brain abscess under our care, that it is carried to the inflammatory site in the cerebral tissue where it is efficacious. The intraventricular administration is of incontestable value.

I am hazarding the opinion that the prolonged administration of massive doses of penicillin was instrumental in the prevention of further secondary brain abscesses from the pulmonary source in the second case, for it is well known that multiple, metastatic brain abscesses are not uncommon, and constitute a constant dread to the surgeon.

SUMMARY

1. The universally recognized catastrophe of a rupture of a brain abscess into the ventricular system is discussed.

2. The findings upon which the diagnosis is established are recorded.

3. Two such cases, one the rupture of an adjacent and the other of a metastatic brain abscess, with recovery are herewith reported.

I wish to acknowledge here my appreciation of assistance rendered by Dr. E. F. Brooks of the Neurological Service.

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PERIARTHRITIS OF THE SHOULDER

By J. D. McInnes, M.D.

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PATIENTS suffering from this disability exhibit marked loss of function of the upper extremity due to pronounced limitation of shoulder function, which in turn is the result of chronic adhesive subacromial bursitis commonly referred to as "frozen shoulder". Information concerning this disability is brief and rather indefinite in the literature. The etiology is apparently not well understood. Watson-Jones[1] claims it is usually the result of some strain or injury to the joint capsule, the subacromial bursa, or the surrounding fibrous tissue. However, this is not in accordance with the views expressed by Haggart and Carr[2] who say that the majority of patients with this disability give no history of injury. The condition appears to be more common in females than males and the greatest incidence occurs in the 5th and 6th decades. Generally speaking, the lack of understanding of the basic etiology has been responsible for much ineffectual treatment.

Persistent pain in the shoulder which often extends down the arm and up into the neck is the chief reason why these patients seek medical aid. Occasionally advice is sought because of lack of motion in the affected shoulder. In long standing cases the pain may have disappeared. There will be various degrees of muscle atrophy depending on the length of time of the disability and frequently the fingers are swollen and show a marked loss of function. The arm, wrist and hand may be similar in appearance to that seen in hemiplegia or rheumatoid arthritis.

The chief loss of function is in external rotation and abduction although internal rotation so as to put the hand behind the back is almost always impossible. Local tender points may be felt around the joint capsule but in cases actually "frozen" this tenderness is not usually severe. In patients with calcification and adhesive bursitis local tenderness is more accurately defined. The surgeon is often deceived as to the actual amount of abduction present, as these patients use a combination of scapulo-thoracic movement along with shoulder elevation to give a false abduction of varying degrees. Usually there is some anterior-posterior movement and, if the scapula is fixed with the finger you may find true passive abduction to be 15 to 20°. X-rays of the shoulder usually reveal generalized decalcification of the bones of the shoulder girdle and occasionally calcium deposits may be seen in the sub-acromial bursa. It is believed by Haggart and Carr[2] that the basic factor causing this disability is the presence of adhesions between the floor and roof of the subacromial bursa, and consequent loss of gliding function normally present there.

CASE 1

Mrs. W., aged 59, came to me from western Canada complaining of severe pain in her left shoulder. This had been present with increasing intensity for 6 months. This pain extended up into the neck and down the medial surface of the arm to the fingers. The hand was stiff and swollen with marked restriction of finger movement. Flexion of the elbow was possible with difficulty to about 78°. The muscles of the shoulder girdle and arm revealed considerable atrophy and circulatory changes were present throughout. Active true abduction was impossible but pseudo-abduction through 15° was possible by scapulo-thoracic movement. There was slight anterior-posterior active movement present in the shoulder. External rotation was nil and the arm was held partly flexed at the elbow and held against the anterior body wall. There was no clinical, laboratory or radiological evidence of any of the arthridites. The radiographs revealed marked decalcification of the bony structures of the shoulder girdle. All attempts at movement of the shoulder either actively or passively provoked marked discomfort and there was persistent numbness in the whole extremity. The general condition of the patient was good for her age and there was no evidence of any foci of infection. In any case it is extremely dubious whether or not foci of infection have anything to do with this affliction.

CASE 2

Mrs. B., aged 63, was assigned to me on the indigent service of St. Joseph's Hospital. This woman had had various diagnoses and a variety of forms of treatment without result. She complained bitterly of pain in the right shoulder and held her arm immobile by her side with the elbow flexed and the forearm resting on the anterior surface of the body. The hand was swollen and stiff and the fingers revealed a marked loss of function and power. The whole arm was markedly atrophic. Tenderness was present over the subacromial bursa but it was not well localized and almost equal tenderness could be elicited from pressure anywhere along the joint capsule. True active abduction was nil but pseudo-abduction with scapulo-thoracic movement was present to about 20°. Attempts at passive abduction caused great pain and the angle of the scapula was felt to swing towards the axilla. A slight amount of anterior-posterior movement was possible at the shoulder joint. The elbow joint could be flexed actively but slowly to 90°. It was impossible and painful to attempt either active or passive external or internal rotation. Radiographs revealed rather marked decalcification of the head and neck of the humerus and the surrounding bony structures. There was a small spicule of calcified material projecting from the under surface of the acromion.

TREATMENT

In the treatment of this disabling condition prolonged care and an intelligent persistent patient are prerequisites. Watson-Jones[1] believes that all early cases should be treated by active movement only and warns against passive manipulation. He admits, however, that in far advanced cases passive manipulation is not only indicated but necessary. Both of the cases presented here were of the long-standing far advanced variety. Haggart and Carr[2] believe that the patient should be put to bed and put up in traction abduction and external rotation before being manipulated under anæsthesia. This is to stretch the ligaments and joint capsule and relieve muscle spasm, this possibly is a safety precaution against fracturing the humerus by manipulation. Because of pain and fixation I have found this technically too difficult to do and have changed the method of treatment.

Both of the patients described above were treated in a similar manner because of equal degree of fixation and pain. Brachial plexus block and subacromial bursa injection of novocain did not appear to be of any value in one of my patients and was not tried in the other. Both were manipulated at once under anæsthesia and adhesions were heard and felt to break with considerable force. The arm was manipulated while an assistant fixed the top of the shoulder and the angle of the scapula. The patient was then confined to bed with the arm put up in abduction, and external rotation with 8 pounds of skin traction. After manipulation, the shoulder became swollen and painful and almost continuous sedation was necessary.

Several sedatives were tried including intravenous novocain, intravenous alcohol, demerol, and acetyl salicylic acid; none were entirely satisfactory. After 3 or 4 days the arm was removed temporarily from the apparatus and manipulated, following this, manipulation and active movements were carried out daily until a

second manipulation under anæsthesia was done. The patient was kept on this routine for approximately 3 weeks and then was removed from the apparatus. The next step in therapy consisted of massage, heat and continuous active movement. The patient was instructed to move the arm actively for at least 5 minutes out of every hour. It was found that gradually the range of movement increased and pain on movement decreased. After leaving hospital both patients were given a routine of shoulder exercises including pendulum movements, and were encouraged to persevere for months. They were advised to construct rotary wheels and overhead pulleys and persist in strengthening exercises.

One patient Mrs. W. had complete return of function and a painless shoulder after one year of treatment and guidance. The other patient Mrs. B. is now in the home exercise and massage phase and is progressing steadily and having less and less discomfort. She now has a complete range of passive movement and I expect that in a further 5 months when her muscles have been strengthened by exercise her shoulder will be quite a useful joint.

Haggart and Carr[2] advised the application of intense heat after manipulation but in these patients more relief was obtained from the use of ice packs.

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INFECTIOUS LYMPHOCYTOSIS

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THE establishment of infectious lymphocytosis as a disease entity is credited to Smith[1] who in August 1941 reported two cases of marked leucocytosis of 44,900 and 98,000 with lymphocytosis of 79 and 86%. The cases were those of children who exhibited no signs or symptoms. Previous references in the literature include that of Reyersbach and Lenert[2] who in February 1941 reported sixteen cases of an atypical infectious mononucleosis which did not have any of the clinical manifestations of this disease and with the sole hæmatological feature of a lymphocytosis ranging from 71 to 93%. The heterophile agglutination tests were consistently negative. The authors cited refer to a previous report of Wilson and Cunningham[3] who in 1929 described a case of hyperleucocytosis in an adult of twenty years without clinical signs or symptoms. This is apparently the first reference in the literature.

In 1943 Duncan[4] reported the case of a child 4 years and 11 months with acute abdominal pain on whom surgical intervention was considered. The white blood count was found to be 45,600 with 65% lymphocytes. A provisional diagnosis of acute lymphatic leukæmia was made. Three days later the white blood count was 110,000 with 92% lymphocytes. The differential blood count and the duration of the hæmatological picture was identical to those previously described in the literature except that in this particular case there was an acute onset simulating a surgical condition.

Smith[5] in 1944 reported four new cases, three occurring in one family and one in a hospital contact, and comes to the conclusion that the disease is both infectious and contagious and has a possible incubation period of 12 to 21 days.

Finucane and Phillips[6] in 1944 reported 21 cases occurring in the children's ward of a tuberculous sanatorium; the leucocyte count ranged from 22,500 to 120,000 per c.mm. with a relative lymphocytosis of 62 to 97%. In none of these cases were there acute symptoms at the onset. The average duration of leucocytosis was four and seven-tenth weeks. They concluded that this condition was caused by some infective agent but were unable to demonstrate the supposed virus responsible.

Diagnosis

The clinical signs and symptoms may be absent, very mild or may produce a severe constitutional reaction which is notably of short duration and marked by general malaise, fever, vomiting, central nervous system symptoms and sometimes symptoms and signs simulating a surgical abdomen. Upper respiratory tract infection is the most common of all findings. Lymphadenopathy is slight or absent. The blood examination shows a leucocytosis usually to a high degree with a relative and absolute lymphocytosis. The lymphocytes are

small and mature. The Paul-Bunnell test is consistently negative.

A leukemoid reaction of the lymphoid type is frequently encountered in upper respiratory infections especially in children. Pertussis usually exhibits a lymphocytosis and occasionally a hyperleucocytosis of 60,000 or more with a lymphocytosis of 80 to 90%. The clinical history and findings and, in cases of doubt, demonstration of the Bordet-Gengou bacillus can usually establish the diagnosis.

In infectious mononucleosis there are usually prodromal signs and symptoms, general malaise, low grade fever, sore throat, tender enlarged lymph nodes and sometimes splenomegaly. There are, however, some cases where the clinical signs and symptoms are minimal. The heterophile agglutination is said to be positive in about 75% of cases. In infectious lymphocytosis it is never positive.

The blood picture serves to give a more exact differentiation between the two diseases. In infectious mononucleosis the total leucocyte count is rarely over 25,000 per c.mm. while in infectious lymphocytosis counts over 50,000 are not uncommon. In infectious lymphocytosis the predominating cell is the morphologically small, mature, normal looking lymphocyte. In infectious mononucleosis the predominant mononuclear cell has been demonstrated by supravital staining technique to be a form of lymphocyte, but is larger than the type found in infectious lymphocytosis. The cytoplasm is abundant, staining very dark with Wright's stain, contains azure granules and exhibits vacuolation. This vacuolation in basophils results in the so-called foamy cells of infectious mononucleosis.

Acute lymphatic leukæmia runs a rapid course and progress is steadily down-hill. Acute infectious lymphocytosis may, by a severe constitutional reaction and hyperleucocytosis, as in the case to be described, simulate lymphatic leukæmia but this stage is of short duration and rapid clinical recovery ensues. In leukæmia progressive anæmia and decreased platelet count is characteristic and the leucocytosis, which in the leukæmic form may be as high as 3 to 400,000, shows a definite immature type of lymphocyte.

J.S., a girl, aged 7 years, was admitted to Stettler Municipal Hospital on January 17, 1946. The patient was in her usual good health until about three weeks before admission, when her parents noticed that she was pale listless and unwilling to play with the other children. She continued at school but several days before admission came home from school with her lunch pail untouched, complaining of chills and fever. She had a slight cough. Past history was non-contributory. During her first hour in hospital she had a severe nosebleed from the left nostril, and the day after admission had a similar epistaxis, this time from both nostrils. She had never had a nose bleed before.

Physical examination.—The patient was co-operative and intelligent, but there was a certain listlessness and apathy about her that could not be considered as normal. Temperature 102°. The tonsils were hypertrophied and hyperæmic, but no ulcerative patches or follicles were seen. The general physical examination showed little else of note. The liver and spleen were not palpable. Skin showed no petechiæ.

The urine contained a trace of albumin; microscopically a few epithelial cells. Blood: hæmoglobin 67%; red blood cells 3,230,000; white blood cells 14,700; differential: polymorphonuclears 30%; mature lymphocytes 62%; monocytes 7%; eosinophils 1; bleeding time 5 minutes; coagulation time 4 minutes; platelets appeared to be present in normal amount.

On the second day of admission temperature was 103°. Severe bilateral epistaxis was present. The leucocytes rose to 30,600; polymorphonuclears 15%; mature lymphocytes 85%.

On the third day the patient looked better and the epistaxis ceased. A Paul-Bunnell test was negative; blood transfusion 200 c.c. was given. On the fourth day patient was much better and temperature was normal. The white blood count was 29,350; lymphocytes 71%. Patient complained of some pain in the neck and a spinal puncture was done. Fluid was clear and pressure normal. Cells were 10 per c.mm.

From the fifth day on there was steady clinical improvement and the temperature remained normal. No further epistaxis occurred and appetite improved. The total leucocyte count returned to normal 18 days after admission, but the differential still showed a lymphocytosis of 70%. The following is a table of blood findings from the day of admission till discharge 18 days later.

TABLE

Day of admission	*Hæmoglobin*	*Red blood cells*	*White blood cells*	*Percentage of lymphocytes*
1	67%	3.23	14,700	62
2	69%	3.05	30,600	85
3	65%	3.45	31,750	87 blood given
4			29,350	71
6	65%	3.51	26,950	68
7	73%	4.5	23,000	72
9			17,750	60
13	70%	3.90	12,950	72
18	71%	3.70	8,500	70

On the fifteenth day in hospital patient complained of pain in the calf muscles of left leg and on walking favoured the left leg. Examination of leg showed no loss of muscular power but slight diminution of the ankle jerk, as compared to the right. Massage and hot packs relieved the pain but patient on discharge had a slight limp. She was seen on March 7, which was approximately one month after discharge. The parents stated that she was noticed to still favour her left leg especially on getting up from a sitting position on the floor. Physical examination showed same findings as before.

The blood smear taken at this date showed considerable improvement over the previous films examined. As the leucocytes were poorly stained they were unsatisfactory for differential count.

SUMMARY

1. A short summary of the available literature on infectious lymphocytosis is presented, together with an illustrative case.

2. The disease appears to be a clinical entity and would seem to be infectious.

3. It has to be differentiated from infectious mononucleosis and in the early stage from acute lymphatic leukæmia. Abdominal signs and symptoms sometimes simulate an acute surgical condition.

I would like to acknowledge with thanks valuable remarks on the blood smears by Dr. J. J. Ower, Dean of Medicine, University of Alberta, Medical School. To Miss Ruth Kennedy, Matron of Stettler Municipal Hospital and Mrs. Tipman, I extend my appreciation for their compiling the case history and laboratory data.

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PROSTATITIS ON THE NORTH ATLANTIC SERVICE

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THE type of urological case seen in the Service is essentially the same as that seen in civilian life. In different theatres of war, however, the incidence and severity of a certain type of case are often increased. In the North Atlantic area a large number of lower urinary tract and genital tract infections are seen. In one six month period, 120 cases of non-specific prostatitis were seen in the urology clinic at the Royal Canadian Naval Hospital in St. John's, Newfoundland, and these represented approximately 15% of the cases during this time.

ETIOLOGY

Service personnel are in the younger age groups and it is rare to find prostatic hypertrophy, tumours, or the other urological diseases of later life. Hinman[1] states that 35% of all males have infected prostates and that they are seen most frequently between the ages of 30 and 50 years. The age of these 120 cases varied from 20 to 39 years and averaged 26 years.

The high incidence of prostatitis in this area is the result of several etiological factors. In the North Atlantic area there are conditions which tend to produce congestion of the bladder neck and that congestion predisposes to infection or causes a latent infection to light up and produce symptoms. Men at sea are repeatedly going from warm mess decks to cold upper decks, where they are required to stand watch for several hours. Their watch, as a rule, keeps them in one position, where they do not have much opportunity to exercise and keep warm and, despite adequate protective clothing, it is not infrequent for a man to become soaking wet as well. Because of the frequency of cold, wet days the shore staff are also subjected to the same repeated changes in temperature and moisture, but to a lesser degree. Heat or cold applied to the skin will produce, respectively, depressor or pressor vasomotor effects in viscera remote from the point of application.[2] This is brought about by a reflex mechanism or by minor changes in the temperature of the blood acting on the heat control centre. It has been observed experimentally by means of the bronchoscope that a change of skin temperature (either rise or fall) of from 0.01 to 0.04° C. is sufficient to induce this vascular response. The physiological mechanism of this response has been described in detail by Paterson[3] and others and will not be repeated here. Men who are constantly exposed to these much greater changes in temperature are prone to develop congestion in certain viscera. This action is more clearly demonstrated in the respiratory tract but the same effect occurs about the bladder neck.

Several clinical observations would indicate that congestion was of practical significance and that it was the essential primary lesion in most cases. First, the onset of symptoms frequently was associated with exposure. Second, diathermy given to ambulatory patients, with prostatitis, in the colder winter months frequently exaggerated symptoms, whereas it was very effective in relieving symptoms of patients confined to hospital or of ambulatory patients during the warmer weather. Third, in the same six months, 26 men presenting symptoms of urgency, frequency and dysuria, usually associated with pain in both groins, had a tender prostate on rectal examination, but no demonstrable pyuria or infection of the prostate. All

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responded well to alkalies and pelvic diathermy and none returned later with urinary infection. These symptoms were due to an acutely congested bladder neck with no apparent infection. Fourth, as seen in Table I, *M. catarrhalis* and diphtheroid bacillus, relatively non-pathogenic organisms, were grown most commonly from specimens obtained endoscopically. It would appear that congestion decreased the local resistance and left the gland susceptible to infection by these organisms. Fifth, the high incidence of gross hæmaturia was probably due to capillary bleeding from an acutely congested gland, because, on endoscopic examination, none showed ulceration and submucous varices were demonstrated in only one case. Sixth, the onset of symptoms occasionally followed sexual or alcoholic excess, and alcoholism as a cause of recurrence of symptoms was very striking. The importance of disuse and stasis could not be estimated by clinical observation.

The similarity between this congestion and vasomotor rhinitis is striking. To pursue the analogy further, allergy is a common etiological factor in vasomotor rhinitis but its importance in prostatic infection has not been demonstrated. Nervous tension, as an intrinsic factor in vasomotor rhinitis, has been stressed by Paterson[3] and it probably plays an active part in prostatic infection as well. Men at sea are always under tension and some degree of urinary frequency is experienced by many. It is probable that there is a local vasomotor imbalance in many of these men since the functional disturbance is so widespread.

History of a former attack of gonorrhœa was obtained in 43 cases (35.9%). Eight men had gonorrhœa in the preceding three months and 35 men had previous attacks, ranging from three months to 22 years. In none of these cases were we able to grow the gonococcus in specimens obtained endoscopically. It is felt that the preceding gonorrhœal infection was the original prostatic infection in many of these 43 cases.

Associated non-specific infections of the prostate and anterior urethra are very common. During the six months under study, 121 cases of non-specific urethritis were seen and 72 (approximately 60%) of them had prostatitis as well. In the 120 cases of non-specific prostatitis 72 had urethritis as the presenting or a secondary symptom and a further 22 gave a history of previous non-specific urethritis. Ninety-four or 78.3%, therefore, either had associated urethritis or had had a previous attack. In many cases the prostatitis is secondary to the urethritis but the reverse is also often found.

Other apparent etiological factors included one patient with a previous pyelonephritis, one patient with an associated infected right renal calculus and eight patients with other active foci of infection; 2 with balanitis, 2 with tonsillitis, one with sinusitis and 3 with infected gums.

The possibility of vitamin C deficiency had to be considered in 11 cases who presented with gross hæmaturia. However, none of these men showed other evidence of vitamin C deficiency and blood ascorbic acid levels were normal in the four cases with most severe hæmaturia.

Cultures of material collected endoscopically from 36 of these cases and from 39 cases of a previous group are shown in Table I. The combined figures for these 75 cases differ from those of Delzell and Lowsley,[4] McCarthy and Ritter,[4] Culver,[4] and Kretschmer[5] in that *M. catarrhalis* and diphtheroid bacillus, relatively non-pathogenic organisms, are found most commonly. Sterile specimens were obtained from seven men who had had gonorrhœa previously.

TABLE I.

ORGANISMS OBTAINED FROM PROSTATE

Micrococcus catarrhalis	45
Diphtheroid bacillus	27
B. Coli	6
Staphylococci (undifferentiated)	5
Streptococcus hæmolyticus	4
Streptococci (undifferentiated)	3
Staphylococcus aureus pyogenes	3
Staphylococcus hæmolyticus	2
Staphylococcus albus	2
Streptococcus viridans	1
Streptococcus fæcalis	1
B. Subtilis	1
Hæmolytic bacteroids	1
Gram negative rods (undifferentiated)	1
No growth	7

PATHOLOGY

There was little chance for pathological study in a series such as this, since none came to autopsy and none had tissue removed for examination, but a review of the clinical histories reveals a high incidence of associated infections. Anterior urethritis was noted in 78.3% of cases. In 9 cases the seminal vesicles were distended and tense on rectal examination but less marked involvement of the vesicles was probably present in many more. A vasitis was demonstrated in one case and 16 cases either presented with or had had previously epididymitis. All 69 cases examined endoscopically had varying de-

grees of congestion of the trigone and prostatic urethra. In a few cases purulent exudate was seen protruding from the prostatic or ejaculatory ducts. Five men had diffuse cystitis. The infection was chronic in 94 of our cases, sub-acute in 22 and acute in 4. None of the cases went ahead to abscess formation.

Eisendrath[6] has shown that prostatic calculi are frequently surrounded by infection, with some localized abscess formation, but no prostatic calculi were demonstrated in the 69 cases who had x-rays of the pelvis. Median bar formation, which is a later complication, was not seen.

Three primary causes of gross prostatic hæmorrhage are mentioned in the literature: (1) ruptured submucous varices; (2) ulcerations, and (3) generalized prostatic congestion with capillary bleeding. In one patient, who was examined during a period of hæmorrhage, small submucous varices were seen, along with acute congestion of the trigone and prostatic urethra, but no definite bleeding point could be made out. In the other 10 cases with gross hæmaturia nothing except congestion was found.

DIAGNOSIS

Diagnosis was made on finding more than 5 pus cells per high power field in the prostatic fluid. The prostate was massaged and the fluid examined immediately after voiding. In this way the three glass test occasionally gave confirmatory evidence and the prostatic fluid was not contaminated by material lying in the anterior urethra. The prostate, on rectal examination, varied from a slightly tender gland of normal size, shape and consistency to a uniformly enlarged gland which was soft and very tender. Specific infection was ruled out, in all cases, by repeated smears and cultures.

SYMPTOMS

The clinical pictures ranged from an acutely ill patient with marked urinary distress to one who had no symptoms referable to the urinary tract. Symptoms fell into four groups; urinary, genital, secondary infections and referred pain.

In the urinary group, urgency, frequency and dysuria were the presenting symptoms in 25 cases, and were mentioned as lesser complaints by 18 others. One man presented with enuresis which cleared up after the prostatitis was treated and five were referred because of persistent pyuria, but each presented other symptoms as well. Symptoms of bladder neck obstruction were not encountered.

Gross hæmaturia was found in 11 cases and fell into 3 groups. In the first group were 7 men who had terminal hæmaturia, associated with marked frequency and dysuria, in acute or subacute infections. The other 4 cases were more interesting because the hæmaturia was massive and prolonged and because the infection, as estimated by symptoms, leucocyte count and sedimentation rate, was not acute.

One man gave a history of 26 attacks of gross hæmaturia. Each attack appeared after sexual excitement and lasted for 12 to 24 hours. He had been treated, during a previous attack in 1942, in the Royal Victoria Hospital, Montreal, and the diagnosis at that time was subacute prostatitis. He was examined thoroughly during 2 attacks and nothing aside from chronic non-specific prostatitis was demonstrated.

The third type of gross hæmaturia was seen in three men who presented essentially the same clinical picture. Following a few days of mild dysuria, gross hæmaturia with no exaggeration of the burning occurred and persisted for 6 to 24 hours. Complete investigation, repeated at intervals up to 6 months in one case, failed to reveal anything except a chronic, non-specific, prostatic infection.

In the genital group of symptoms urethral discharge occurred in 72 cases. The association was so marked that the prostatic fluid was examined in all cases presenting with non-specific urethritis. Both the duration of discharge and the number of recurrences of urethritis were markedly reduced by active treatment of the prostatitis.

All 16 cases of non-specific epididymitis seen during this period had prostatitis as well. Recurring attacks of acute epididymitis were common. Because of these recurrences, all cases of epididymitis were kept in the hospital for seven to ten days after the acute infection subsided and were given diathermy to the pelvis daily. After this treatment was begun no further cases of recurrent epididymitis were seen. One man had painful erections but no impotence, premature ejaculations or other disorders of sexual function were encountered.

In the secondary infection group, prostatitis was demonstrated in five cases of polyarthritis who were sent in to have a urinary focus of infection ruled out. Only two patients, however, showed improvement of the polyarthritis when

the prostatitis was effectively treated. One man developed periarthritis and another developed lumbo-dorsal fibrositis during exacerbations of prostatic infection. The two conditions would appear to be related in some cases but not in others.

In the referred pain group, all cases of prostatitis with pain are presented, although the pain was probably not of the referred type in some. Low back pain was found in 25 cases. It was characteristically a dull, steady, aching, non-radiating pain, occurring bilaterally at the lumbo-sacral or sacro-iliac level, worse on cold, wet days or at defæcation and with no other associations. It is essential to rule out prostatitis in all cases of low back pain. It is also essential to treat the prostatitis, even when other lesions capable of producing the pain are present, because it is often an associated factor as well as the primary cause of low back pain.

Twelve men had dull, steady, non-radiating pains well localized to the costo-muscular angle and occasionally bilateral. Pain was also referred to the suprapubic area, the groin, the testicle, the penis, the perineum, the rectum, the thighs, the hip, the right lower abdomen or about the umbilicus. Appendicitis was easily ruled out in three men with right lower abdominal pain.

TREATMENT

It was difficult to standardize treatment because of a wide individual variation in response to the different types of therapy. As a general rule the men were treated as ambulatory patients. When response to this preliminary treatment was not satisfactory the man was admitted for complete investigation, with special search for tuberculosis, urinary obstruction, upper tract infection, infected periurethral glands, remote foci of infection, urinary or prostatic calculi and the causal organism. This investigation revealed 4 cases of renal tuberculosis, one infected renal calculus, 5 cases of cystitis, 8 remote foci of infection and 2 men with prostatic hypertrophy. These two men with hypertrophy are not included in the series of non-specific infections. Both had genito-urinary tuberculosis but were referred to the urology clinic with a diagnosis of prostatitis. Associated lesions were actively treated before treatment was begun on the prostatitis. Resistant prostatic infections would often clear up after infected tonsils were removed, infected gums were treated, urethral strictures dilated or patients with mild balanitis circumcised.

TABLE II.
SYMPTOMS BY GROUPS

Symptom	*Primary*	*Secondary*	*Total*
URINARY:			
Urgency, frequency, dysuria	25	18	43
Hæmaturia	4	7	11
Enuresis	1	0	1
Pyuria	0	5	5
GENITAL:			
Urethral discharge	56	16	72
Epididymitis	11	5	16
Painful erections	1	1	1
SECONDARY INFECTION:			
Polyarthritis	4	1	5
Periarthritis	0	1	1
Fibrositis	0	1	1
REFERRED PAIN:			
Low back pain	8	17	25
Costo-muscular pain	5	7	12
Suprapubic pain	1	9	10
Perineal pain	3	3	6
Pain in groin	0	6	6
Testicular pain	2	2	4
Right lower abdominal pain.	0	3	3
Penile pain	0	2	2
Periumbilical pain	0	1	1
Pain in right hip	0	1	1
Pain in thighs	0	1	1
Rectal pain	0	1	1

Since these men were worried about possible venereal disease or disordered sexual function, it was not difficult to maintain their co-operation regarding supportive treatment. This consisted of forcing fluids, avoiding alcoholic beverages, carbonated soft-drinks, spicy foods and sexual excitement. They were advised to keep their feet and hips warm and dry and, if there was associated urethritis, to discard tight clothing which would prevent drainage of the discharge.

Because of this fear of impotence and sterility these men were fertile ground for neuroses. With this in mind, they were repeatedly reassured that the infection would not result in disordered sexual function. It was encouraging to find that, aside from one man with painful erections, none returned with these symptoms.

Diathermy was the most effective form of treatment. It consisted of short wave diathermy to the pelvis for twenty minutes daily over five to ten days. Heat may also be applied to the prostate with a rectal electrode and a temperature of 115° F. is maintained for twenty minutes. In the colder months diathermy was not as useful in ambulatory patients. It was effectively combined with sulfonamides in acute and subacute infections and with alkalies when there were severe symptoms of bladder neck irritation.

Mapharsan was very useful in resistant coccal infections and in the so-called abacterial infections. The dosage used was 0.06 gm. each day

TABLE III.

Treatment	*Cured*	*Improved*	*No effect*
Diathermy	36	14	10
Rest and diathermy	4	0	0
Rest, diathermy and sulfonamides	18	3	2
Diathermy and alkalies	5	1	0
Diathermy and massage	1	0	0
Massage	5	3	0
Mapharsan	16	7	6
Mapharsan and diathermy	7	2	0
Penicillin	7	0	9
Sulfonamides	9	6	13
Removal of other foci	2	3	3

for 3 or 4 days. When combined with diathermy excellent results were obtained and this treatment was easily given to ambulatory patients.

Massage was reserved for patients who presented with palpable seminal vesicles and for cases who were chronic and had resisted other forms of treatment. Although massage violates one of the cardinal rules of surgery, it is effective and necessary in the more chronic forms of infection. However, massage was contraindicated in most cases in this series because of the acute nature of the syndrome.

Penicillin was given to the 16 most resistant cases. A dosage of 100,000 units each day for five days was used. In 7 cases the infection cleared up promptly but in the other 9 there was no apparent improvement. Response to treatment was, therefore, variable, but the drug was reserved for the most resistant cases and a higher incidence of cure might well be expected in an unselected series.

Sulfonamides were effective when combined with diathermy in acute and subacute cases but results were poor when given alone or when given to chronic cases. Since the six month period under review, sulfonamides and penicillin have been used together for 5 to 7 days in the most resistant cases and results have been encouraging.

Vaccine therapy, dilatation of the posterior urethra or the various radical operative procedures were not used in this series, although their effectiveness in certain cases is undisputed.

SUMMARY

Statistics of 120 cases of non-specific prostatitis are recorded. The various factors indicating that the essential primary lesion was congestion and the high incidence of gross hæmaturia seem worthy of report.

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PROTRUDED CERVICAL INTERVERTEBRAL DISCS—A CAUSE OF BRACHIAL NEURITIS

By E. S. James, M.D., F.R.C.S.(Eng.)

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IN 1927, Stookey described three cervical tumours which were encountered at operation, and considered them to be chondromata. Later Schmorl, in 1929, published his studies on intervertebral discs and people realized that these "chondromata" which had been regularly found by neurological surgeons were portions of the intervertebral discs. Since that time most attention has been focused on the lumbar spine and sciatica, and the significance of protruded cervical discs has been appreciated by only a comparatively few. Hawk in 1936 collected a series of 36 cases in the literature. Even today the literature gives one a poor idea of the incidence of this common condition.

ANATOMY

Intervertebral discs act as a cushion between the vertebral bodies and at the same time allow movements of the spine to take place. The discs are widest in those portions of the spine where most movement, such as flexion and extension, takes place. A rule which applies generally is that lack of movement means stability and increased movement means instability, and so vulnerability. Hence we find that the lower two lumbar discs are the thickest and the ones most often damaged. This also applies to the discs in the lower cervical region.

In the lumbar region the cord rapidly diminishes in size and stops opposite the first or second lumbar body. The nerve roots descend obliquely. In the cervical region the cervical expansion of the cord fully fills the spinal canal and the nerve roots run directly lateral from the cord to the intervertebral foramina.

These roots lie directly posterior to the cervical intervertebral discs.

When discs protrude posteriorly the protrusion is most often laterally, as the posterior longitudinal ligament is thick in the mid-line and thinner at each side where it lies over the intervertebral disc. Mid-line protrusions do occur and may cause a paraplegia. Large lateral protrusions may compress the cord and produce a Brown-Séquard syndrome but the great majority of protrusions are farther lateral and compress the nerve root against the lamina, ligamentum flavum or articular facet. In the cervical region one damaged disc compresses one nerve root but it is possible to have more than one disc affected. Multiple discs are fairly common in the lower lumbar region, but it is possible for one protrusion to compress more than one nerve root because of their oblique descent in the spinal canal.

SIGNS AND SYMPTOMS

The patients seek advice because of pain beginning in the lower cervical region, or over one shoulder, which radiates down the arm. Most of these cases are in people past 40 years of age and no history of trauma can be obtained. Trauma, however, is a factor in young people and several cases have been seen in the third decade. Degeneration of connective tissue is responsible for the vast majority of cases. The pain often comes on at night and many say that the pain is worse at night or after the head has been held in one position for a long time. It is necessary for them to get out of bed and walk about in order to get relief. The pain is made worse by work which in some instances cannot be performed. Coughing or sneezing often aggravates the pain or causes it to be of a shooting, stabbing nature. Numbness is a common complaint. Some complain of weakness in the limb or that the limb tires easily. Pain may be present on both sides at once, but it is more severe on one side. Occasionally a history of a similar attack in the opposite arm will be obtained.

The patient should be stripped to the waist for examination. There is often no abnormality to be seen on inspection. The head may be flexed to the opposite side and some muscle wasting may be apparent. Usually there is no restriction of neck, shoulder or arm movements. Forced flexion of the neck to the affected side with pressure on the top of the head will aggravate the pain and often make it radiate down the arm. Conversely, lifting the patient upwards by placing one hand under the chin and the other under the occiput may relieve the pain completely while the traction is maintained. Deep pressure over the affected interspace just lateral to the cervical spines produces increased pain. Pain and tenderness is often felt in the region of these spines.

The cervical disc most commonly involved lies between the bodies of C5 and C6. This protrusion compresses the sixth nerve root. Tenderness to deep pressure is elicited over this interspace just lateral to the adjacent cervical spines. Pain is felt over the top of the shoulder lateral to the deltoid muscle, and down the radial border of the forearm to the base of the thumb. Sensory changes often can be demonstrated in this area. There may be some wasting or weakness of the supraspinatus, deltoid and biceps muscles.

The next most common space lesion is between C6 and C7. Some writers find this is the most frequent site. This, the seventh cervical nerve, supplies the triceps muscle which may be seen to fibrillate or twitch, and to be weak or flabby. The triceps tendon jerk may be weak or absent. The pain radiates down the mid-volar and mid-dorsal surface of the forearm to the wrist or even into the middle three fingers. Often the tip of the index finger remains numb for long periods after the other symptoms have improved.

One man complained of exquisite pain down the ulnar border of the arm, forearm and hand. He had weakness of the hand, could not adduct or abduct the fingers or oppose the thumb or little finger. His lesion was between the bodies of C7 and T1, affecting the eighth cervical nerve root. Lesions between C4 and C5 are not common, nor is the syndrome so characteristic.

By clinical examination one can readily diagnose a protruded cervical disc and also accurately state the site of the lesion. The diagnosis is usually easily confirmed radiologically. A lateral x-ray picture of the cervical region will show a straight cervical spine which has lost its normal curvature and will also disclose a narrowing of the affected intervertebral disc. It is true that narrow intervertebral discs are often encountered where no symptoms have been obvious; but a narrow

disc is not normal and where it fits in with the clinical picture some cognizance of it must be taken. Where more information is desired, a lipiodol myelogram can be done. This will show a deformity at the site of the protruded disc.

DIFFERENTIAL DIAGNOSIS

Brachial neuritis due to protruded intervertebral discs is an old disease, formerly and even yet diagnosed as various indefinite entities. Many cases are diagnosed as subacromial bursitis. This diagnosis should be made cautiously and probably is not correct in any case where there is a full range of shoulder movements. It may be that it is still incorrect where there is some limitation of those movements. It is not suggested that subacromial bursitis is not an entity, for we have all seen swollen, frozen shoulders and those where calcification of the supraspinatus tendon is demonstrated radiologically.

Probably all cases of the scalenus anticus syndrome are due to protruded cervical discs. There is a spasm and often an hypertrophy of this muscle and the pain may be relieved by severing its insertion but this relieves the pressure on the disc and does not get at the origin of the disorder. Cervical ribs may also fall into this group. One would be unwise to say that cervical ribs never give rise to any trouble, but it is likely that they have been too often accused. It has been suggested that cervical disc protrusions are incorrectly diagnosed as angina pectoris, because of pain down the arm and radiation into the pectoralis major and minor muscles. Irritation of one nerve segment sometimes seems to make the pain overflow into adjacent segments and accurate or clear-cut pictures may not be present.

Osteo-arthritis of the cervical spine has been a frequent diagnosis, suggested by the radiologist and readily accepted by the clinician. It is pointed out that the narrow disc is incidental and the nerve roots are either compressed by osteophytes or by a narrowing of the intravertebral foramina. Osteo-arthritis in the lumbar spine is not accepted as the cause of sciatica. Nature looks after her nerves and must very rarely if ever allow bony outgrowths to encroach on them. Osteoarthritis of the spine with its lipping is a process which accompanies degeneration of the intervertebral discs.

TREATMENT

There are many things one can do to relieve these sufferers. Rest is to be recommended and the cessation of heavy work. Administer mild sedatives. Advise the patient to sleep with one or two extra pillows so that the cervical spine will be kept flexed and the intervertebral spaces kept wide posteriorly and the protrusion minimized. A very thick collar can be made with a pillow and bandaged around the neck. This splints the cervical spine and sometimes gives relief. Large doses of vitamin B intravenously often give prompt relief. Three injections, one every second day, is often all that is necessary. Where this does not produce beneficial results continuation of this form of treatment is not recommended. A leather adjustable cervical collar may be fitted and worn continuously. There are several types of these which are satisfactory. Patients, however, do not like wearing them. Continuous skull traction with a halter often gives relief in a few days. This relief may be permanent or may recur after it is stopped.

Where conservative treatment has failed and the symptoms are severe, operative treatment must be considered. If the myelogram shows a large protrusion one will be more enthusiastic about its removal. Operative removal is difficult as the cord cannot be safely retracted, as it almost completely fills the neural canal. There is a rich extra-dural venous plexus and hæmorrhage may be severe, and finally the protrusion lies directly in front of the nerve root and its retraction to expose the disc may be difficult.

The operation is done with the neck acutely flexed. A mid-line incision is made and the muscles retracted laterally. The correct space is determined and the margins of the adjacent laminæ are nibbled away with rongeurs. Now the ligamentum flavum is removed and the cord with its nerve root exposed. The exposure must extend laterally to fully expose the nerve root and this may require the removal of a portion of the articular facets. Now by retracting the nerve root the protruded portion may be exposed and removed. This may come away in one or more separated portions or a curetting may be necessary. In all cases it is probably best to curette out the space. Some operators suggest that this should be done on both sides.

Following the operation the patient may feel immediate relief of his symptoms. On the other hand, the neuritis may be aggravated for a week or ten days due to the manipulation of the nerve root. He may be allowed to move about immediately and get out of bed in two or three days.

In the past year I have seen 38 cases of cervical discs. Only a small percentage of these have had myelograms, as their symptoms were either not severe or were relieved by conservative treatment. One case had a protrusion between C3 and 4, 4 between C4 and 5, 21 between C5 and 6, 11 between C6 and 7, and one between C7 and T1. Only four cases have been operated upon. All were relieved of the brachial neuritis, but one had considerable weakness following the operation, and has not yet fully recovered.

SUMMARY

The plea put forward is to recognize the brachial neuritis syndrome and to appreciate the part played by the intervertebral disc. Conservative treatment is emphasized.

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IMPORTANCE OF RADICAL TREATMENT IN ACUTE HAND INJURIES

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LATE reconstruction measures after injuries to the hand are poor, especially where extensor tendons have been lost and interphalangeal joints have been opened as a result of the injury. It is the purpose of this paper to indicate how early radical treatment of acute hand injuries may ensure conservation of function.

A rather common industrial accident associated particularly with the punch press, is loss of part of the distal phalanx of one or more fingers. This commonly occurs at about the level of the lunule of the nail. If amputation is done, it has to be behind the distal interphalangeal joint in order to get enough tissue to cover the end of the stump. This entails loss of the attachment of long extensor and flexor tendons to the base of the distal phalanx. To obviate this, a careful débridement is done, removing carefully all remnants of the nail matrix and bringing the bony phalanx down flush with or slightly below the level of soft tissue. A stamp graft is cut of proper area and sewed carefully to the end of the stump. Even in the absence of infection, this graft is apt to be lost due to formation of a hæmatoma under it. This is avoided by cutting a small piece of lead of about the same size as the graft and notching its edges; some of the sutures, which have been left long, are then tied over this bit of lead producing accurate and uniform pressure over the graft. This is left in place for five or six days. The percentage of successes is high with this method and produces rapid healing without loss of function and a painless stump of as full length as possible.

Burns of the dorsum of the hand alone are unlikely to extend deep enough to cause dissolution of the extensor tendons. However, a burn of similar depth over the back of the phalanges is likely to result in loss of the extensor tendons over the interphalangeal joints. This of course, entails opening of the joints and in such a case the result is a fixed flexion deformity at the open joint. Subsequent repair of such a deformity is limited to fixing the ankylosed joint in the best position for function; and in supplying stable covering by means of a free graft to replace the unstable scar. Severe scarring of the back of the hand causes contracture of the metacarpo-phalangeal joint and produces subluxation of these joints with hyperextension deformities. This can be relieved by capsulotomy of these joints and substitution of a sheet graft for the contracted scars of the back of the hand.

However, such deformity at the metacarpo-phalangeal joints can be avoided by doing a sheet graft of the back of the hand immediately if it can be determined that the burn is full thickness of the skin; or as soon as the eschar has separated, usually in three to four weeks. Function of the hand is meanwhile maintained by encouraging active movement during the whole period of treatment necessarily interrupted, of course, for a week or so after the free graft is done. However, if deep burns of the dorsum of the fingers can be diagnosed with reasonable certainty, it is fatal to wait for separation of

eschar because the extensor tendons will become exposed and will die allowing the interphalangeal joints to open. If this occurs, fixed flexion deformity must be accepted and the fingers kept in the position of maximum function, usually about sixty degrees flexion at the proximal interphalangeal joint of the index and with slightly greater flexion at the proximal interphalangeal joint of each of the other fingers, increasing the flexion with each finger toward the ulnar side of the hand so that the finger tips may be opposed to the palm.

Such finger deformities are tragedies. In many cases they cannot be avoided. Of course it is difficult to tell in a fresh case how deep the burn extends, but in consideration of the possibility of calamitous results of deep burns in the dorsum of the fingers, one is justified in being on the safe side, which, in this case is the adoption of radical surgery. The eschar should be separated from the fingers deliberately, under general anæsthesia, within a week of the burn. The fingers, being denuded, are then placed beneath a flap raised on the abdomen or on the thigh. In case the dorsum of the hand is involved as well it should also be included under the flap. Deep burns of the hand were a frequent injury in tank casualties overseas, and this line of treatment was satisfactory where the general condition of the patient allowed of it. In many instances the patient was so ill from other burns that the life-saving measure of covering his main burns with skin was of supreme importance and the hand had to be neglected as a secondary consideration. There is no doubt, however, that where such treatment was given to deep hand burns, the majority of them were saved with preservation of almost complete function.

A similar emergency arises in relation to crushing and wringer type injuries to the hand. Where the injury is confined to stripping off of skin from the back of the hand and fingers, careful cleansing of the wound and débridement, then complete detachment of the skin flap with removal of fat from the raw surface, and suturing the flap back into position, if done within a reasonable time of the injury, results in a fair percentage of cure. If such a lesion is seen later and the wound is infected and involves only the dorsum of the hand, it is best to wait for a few days in order to free the surface of infection as much as possible, and then apply a free graft. Exposed tendons, like exposed bone, will die; nor is either structure a fit surface over which to apply a free graft. Such an injury may result in loss of the central portion of the extensor tendons and opening of the metacarpophalangeal joints or the interphalangeal joints. Even in the last type of case, if the wound is seen early, it is worthwhile to do a careful débridement and place the hand in a flap on the abdominal wall or the thigh. With the help of penicillin and chemotherapy, one is likely to avoid infection in these open joints and if insufficient extensor tendon remains viable, there is a good chance of producing a satisfactory functional result by employment of tendon grafts at a later period.

Severe crushing types of injuries to the hand are apt to result in loss of the fingers as far as the metacarpo-phalangeal joints and also with loss of skin coverings over a large portion of the dorsum of the hand and the palm. In these cases the thumb is usually intact. Amputation would involve amputating through the lower forearm in order to get covering for the stump but this also involves sacrificing the functional thumb. By supplying covering for the hand stump, which may be obtained by elevating a flap from the abdomen, the thumb is left to oppose the metacarpal stump and preserve a large degree of function in the hand.

Some typical crushing and burn injuries to the hand have been described, and measures are suggested to meet the resultant lesions. These are aimed at conserving as much as possible of the hand as a functional unit. This entails quite radical surgery in many cases and the difficulties are not few nor are the results entirely predictable. For instance, it is not possible to tell at the time of treatment of a crush injury to the hand, how much the circulation will be disturbed as a result of the compression and therefore how much of the hand will survive. Even at the time of débridement, one might feel quite confident of circulation to a given part of the hand or fingers, judging by hæmorrhage, and yet progressive thrombosis may occur at a later date and these parts die. However, even with loss of the fingers, such treatment will result in a useful metacarpal stump but one must be reasonably sure that the thumb will survive for without it, of course, such a stump is useless. The thumb and well covered metacarpal hand stump are of great value to the patient. Fixed

flexion deformities of the fingers as a result of loss of extensor tendons and subsequent openings of the interphalangeal joints in burns can often be avoided by early débridement of the eschar and placing the fingers, or fingers and hand, under a flap on the abdomen or thigh.

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CASE REPORTS

PRIMARY IDIOPATHIC SEGMENTAL INFARCTION OF THE GREATER OMENTUM

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Venous thrombosis is frequently encountered in cases of torsion of the great omentum. Such torsion may be primary (idiopathic) or secondary to hernia or other intra-abdominal lesion. To those cases in which no torsion can be demonstrated and no pre-existing etiological factor can be found, Totten has given the name primary idiopathic segmental infarction.

Our search of the literature has revealed only eight previously reported cases. Pines and Rabinovitch reported six cases in 1940 and Totten in 1942 reported two. Hines described a fatal case of hæmorrhagic infarction of the great omentum secondary to portal vein thrombosis and Berger recorded a case in which cardiac insufficiency was a predisposing factor in hæmorrhagic infarction of the omentum. The latter two cases cannot be considered primary lesions because pre-existing disease undoubtedly influenced their occurrence.

The etiology of the condition is not known. Pines and Rabinovitch are of the opinion that "a possible stretching of an omental vein may occur consequent to some trauma, and this in turn leads to the formation of a thrombus". Totten points out that the blood supply of the stomach and omentum is in close intercommunication, and he feels that the strain on these thin-walled veins is definitely increased at the time of vascular congestion incident to a full meal. During this period additional strain from increased intra-abdominal tension due to straining, coughing, sneezing or lifting, may be sufficient to cause a primary rupture of the dependent veins of the omentum, with hæmorrhagic extravasation and secondary thrombosis. Our patient gave a history of eating a pound of cheese immediately prior to the onset of his pain, so it would appear that the vascular congestion occurring when the stomach is full does play a part in the etiology of this condition.

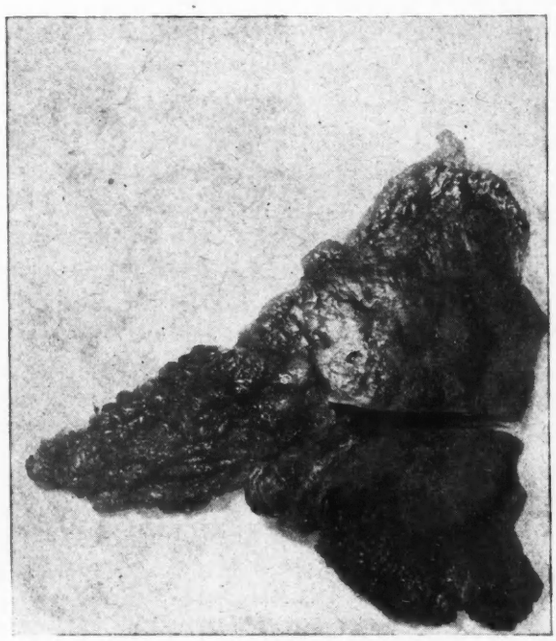

Fig. 1.—Showing the infarcted omental mass. The broad pedicle can be seen showing no evidence of torsion.

Transient torsion must be borne in mind as an etiological possibility, but when one remembers that in true torsion six or more turns of the pedicle are usually seen, this possibility seems unlikely. No evidence of torsion was demonstrated in any cases discussed in the literature or in the one herein presented.

C.J.R., a 29-year old white male was admitted to R.C.N. Hospital, Halifax, the afternoon of December 18, 1944, complaining of severe abdominal pain of three days' duration.

The patient stated he was perfectly well until the night of December 15 when he developed mild crampy generalized abdominal pain following the ingestion of one pound of cheese. He slept fairly well that night only being awakened once with pain. He ate his breakfast the following morning but ate no lunch because of a marked feeling of distension which was not relieved by alkali; the passing of flatus gave some relief.

On the evening of December 16, his pain increased in severity and there was profuse diarrhœa. The latter provided some relief of symptoms. Following the attack of diarrhœa the pain settled in the right lower quadrant.

On December 17 the pain in the right lower quadrant was increasing in severity and he took 1½ ounces of castor oil. On that night he slept very little due to progressing severity of pain. Castor oil was ineffectual and he took epsom salts and ex-lax. Neither of these was effectual. By morning the pain was so severe that he was unable to straighten up in bed.

At no time did he vomit or feel nauseated during the three day siege of pain. He worried constantly about the fact that his bowels were not regular.

The past history was essentially negative.

Physical examination.—Temperature 100° F.; pulse 80; respirations 20; blood pressure 135/70; white blood cells 17,620; sedimentation rate 10; urinalysis negative.

The patient was a well developed, well nourished, moderately obese male, quite distressed, unable to lie quietly in bed.

The essential findings were a distended and tympanitic abdomen. There was moderate rigidity of the right rectus; he was acutely tender in the right upper quadrant, somewhat less tender in the right lower quadrant. The left side of the abdomen showed nothing abnormal, and rectal examination was essentially negative.

A tentative diagnosis of acute appendicitis was made and a laparotomy performed.

On opening the peritoneum a moderate amount of sero-sanguineous fluid was found in the abdominal cavity. The appendix was essentially negative and certainly could not be considered the cause of his symptoms. Further exploration of the abdomen revealed a large hæmorrhagic necrotic mass involving the right terminal portion of the great omentum. This mass was dark red to purple in colour and firm in consistency. It was attached to the anterior parietal peritoneum by fine adhesions which were easily separated with blunt finger dissection. The mass measured 11 x 7 x 4 cm. and was attached to the main body of the omentum by a broad 6 cm. pedicle which showed no evidence of torsion (Fig. 1). The pedicle was doubly clamped and removed. Thorough examination of the peritoneal cavity revealed no other disease. The abdominal incision was closed in layers.

The pathological report* read as follows: "Re the portions of omental mass taken from C.R., I am quite in agreement with the diagnosis of 'segmental infarction of the greater omentum'.

"From the sections it is obvious that there is a venous blockage somewhere. Whether it is a thrombosis or tumour condition I cannot tell, but the veins are all tremendously engorged and there is extravasation of blood into the surrounding fat tissue. There is some acute inflammatory infiltration, particularly over the peritoneal surface, with proliferative reaction in the stroma. I also found some deposits of hæmosiderin in the histiocytes. This could make it look as though it had been there for a reasonable length of time, possibly a week or so. Probably if more blocks were taken proximal to the infarction you might be able to demonstrate thrombosis or some other factor causing this condition, but, from these sections of course, it is impossible to say what the etiology is. I have never seen such a case in my experience."

DISCUSSION

Diagnosis. — In seven of the previously reported cases the preoperative diagnosis was acute appendicitis, while in the other cases subacute perforation of a peptic ulcer was suspected, with appendicitis as an alternative diagnosis. Our case was considered acute appendicitis before operation and it is felt that clinically the preoperative diagnosis of primary idiopathic segmental infarction will rarely be made. However, the condition must be borne in mind when the findings in the appendix will not explain the symptoms present. In the symptomatology constipation has been a frequent finding. These patients have been "bowel conscious" and have usually resorted to cathartics and enemata before hospitalization.

Pathology. — At operation three patients of the Pines and Rabinovitch series exhibited sero-sanguineous fluid in the peritoneal cavity and in four instances the omental infarct was adherent to the anterior parietal peritoneum by a fine exudate. These findings were present in the case presented here. All the reported cases including the present one have exhibited a hæmorrhagic necrotic infarct in the terminal portion of the right or distal free border of the omentum. This mass has usually been red to purplish-black in colour and firm in consistency. No evidence of torsion of the pedicle has been present in any case.

SUMMARY

1. A case of primary segmental infarction of the omentum is presented.

2. The etiology of this condition is unknown.

3. The preoperative diagnosis is extremely difficult.

4. The treatment is relatively simple and consists of removal of the infarcted mass. When operation is performed early the results are universally satisfactory.

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*Courtesy of Dr. W. L. Robinson, Professor of Pathology, University of Toronto.

AN UNUSUAL CASE OF PULMONARY TUBERCULOSIS

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The presence of hæmorrhage in pulmonary tuberculosis is of no special interest. As an immediate cause of death, however, it is uncommon and in the form of the case to be described is extremely rare.

The details are as follows:

The patient, a negro male, aged 53, was admitted to the Montreal General Hospital on July 27, 1945, with severe injuries from a motor accident that morning. His left femur was fractured and he had lacerations of the right thigh and forehead. Later examination showed fractures of the 5th to 10th ribs on the right side. Temperature was 99.4°, pulse 88, respirations 22. There was some cough, but very little sputum.

The general physical examination otherwise showed nothing remarkable. His family history was negative. He had worked for most of his life as a stoker at sea, but gave this up in 1940 and worked as a door porter. He had been in other hospitals for hernia and hæmorrhoids respectively. On questioning he admitted having had a cough for the last five months, but it was not troublesome and he had very little sputum. No hæmoptysis. His general health was fair.

Course of illness.—The left femur was wired on the day of admission and put up in a Thomas splint. An x-ray of the chest was taken next day by portable machine, and was reported as showing dilatation of the arch of the aorta suggestive of an aneurysm. Further x-ray examination of the chest was withheld till he could stand. For the next two months his fracture was under treatment and during that time he was found to be running an irregular fever. Laboratory examinations showed nothing significant; the Wassermann and Kahn were negative. Sputum and urine were negative.

Sulfadiazine was given with no effect, and then penicillin 20,000 units every three hours to a total of 2,580,000 units, also with no effect.

On October 2, x-ray of the chest showed a dense shadow obscuring the left lung field with displacement of the heart and mediastinum to the left. This was regarded as evidence of atelectasis of the left lung: there was no air in the pleural space: the right lung was negative. Blood count showed a leucocytosis of 36,000 which later dropped to 24,000 and then 15,350: red cell count was 3,460,000, with a differential of 82% polymorphonuclears, 6% lymphocytes, and 1% monocytes.

Bronchoscopic examination showed only some œdema of the lower left bronchi with some purulent exudate. This exudate was cultured and later showed heavy growth of *H. influenzæ*. Thoracentesis of the left chest revealed no fluid.

October 3. At this point a medical consultation was held. The x-ray evidence of massive collapse of the left lung was noted. Physical examination showed a flat percussion note over the left chest with bronchial breathing and pleural friction sounds. The pulse was quiet and the patient was remarkably free from dyspnœa or discomfort.

A second bronchoscopic examination revealed that now there was complete obstruction of the left main bronchus. A week later, however, the bronchoscope was successfully introduced into the left bronchus to nearly its termination, where narrowing was noticed. A gush of blood occurred twice during examination but its source could not be traced.

No paresis of the vocal cords was noticed during these examinations, and apart from some hoarseness the patient's voice was not altered. There was no brassy cough, and no Horner's syndrome.

October 20. X-ray examination with lipiodol showed complete obstruction of the left main bronchus about 1½ cm. distal to the carina. In the oblique position the superior border of the bronchus showed a rounded depression, suggesting extrinsic pressure.

The patient was transferred to the medical ward, continuing to run a high and irregular fever, but neither cough nor sputum was a feature. Another paracentesis of the left chest failed to reveal any fluid. Repeated x-rays showed persistence of atelectasis of the left lung, although on one occasion there seemed to be some beginning aeration.

On November 1, he was again taken to the x-ray room, his general condition being much the same, and immediately after the taking of the film he suddenly coughed up a large amount of blood and died almost at once.

This final x-ray within a few minutes of his death, was taken in the lateral position. It showed again a dense shadow filling the left chest, with elevation of the left dome of the diaphragm. There was also some calcification extending upwards and anteriorly from the hilar shadow.

AUTOPSY

The autopsy findings of special interest were as follows:

The right lung was emphysematous but otherwise was normal. The left lung was entirely collapsed and was covered by a thick layer of yellowish white homogeneous, tough tissue which gave the appearance of tumour. On section, the apex contained confluent cystic cavities with a shaggy necrotic lining and irregular fibrosis.

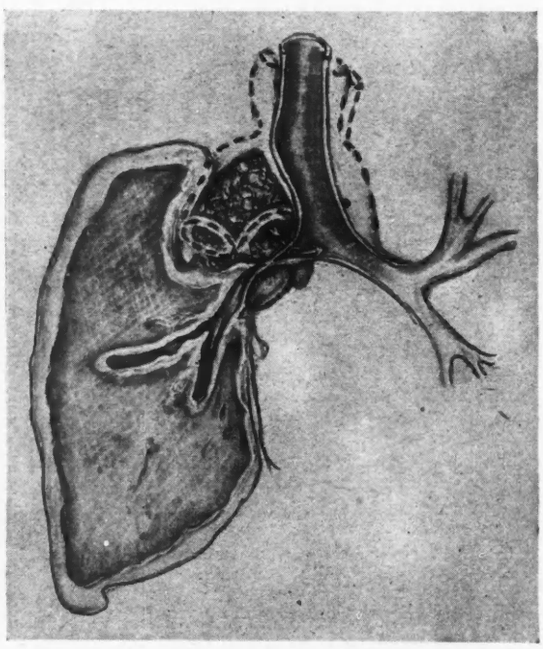

Fig. 1.—Schematic drawing from behind showing encroachment of abscess on aorta with aneurysm, also pressure on trachea.

* From the Medical Service of the Montreal General Hospital.

The thickened pleura medially above the hilus was continuous with a bar of the same type of tissue which ended in a firm globular mass lying in the arch of the aorta. The mass was firmly fixed to the aorta and compressed the left bronchus. Further exploration revealed in the centre of the mass a necrotic-walled cavity containing blood. There was a small sinus tract leading into the left bronchus at its site of compression 3 cm. from the carina. Above, the cavity opened widely into the inferior wall of the aortic arch which was completely destroyed. There was no true aneurysm.

Smears from the pleura and mediastinal mass revealed an abundance of acid-fast bacilli. Microscopical examination of sections confirmed the diagnosis of tuberculosis. There was no evidence of syphilis or tumour. Sections of the right lung showed a good deal of aspirated blood in the alveoli and bronchiolus which accounted for the acute emphysema.

The aorta showed extensive atherosclerosis with ulceration and calcification. There was a moderate perivascular lymphocytic infiltration but nothing to suggest a syphilitic aortitis.

The rib fractures on the right side showed fibrous union.

DISCUSSION

The clinical diagnosis at the time of death was bronchogenic carcinoma, with pressure on the left bronchus and terminal erosion of some large vessel, but the clinician's note at the time was that it was not fully proved. The course obviously was that of an obstructing lesion, leading to pulmonary atelectasis, and there was also evidence of aortic dilatation. A neoplasm in the posterior mediastinum seemed the most likely lesion, for by the time his chest was x-rayed by the ordinary method the atelectasis and spreading pleural involvement masked the involvement of the left apex which was found at postmortem. This probably was of minimal extent at the time of the first chest plate taken the day after admission. The sputum also and the specimens taken by bronchoscope showed no tubercle bacilli. In retrospect, perhaps more significance should have been attached to the continuous fever.

SUMMARY

A case is reported in which symptoms of bronchial obstruction developed in a patient admitted for a fractured femur. There was x-ray evidence suggesting aortic aneurysm, and almost continuous high, irregular fever. Postmortem showed a caseous tuberculous mass in the upper lobe of the left lung and massive lymph node tuberculosis in the superior mediastinum which eroded the inferior wall of the aortic arch and also penetrated the left bronchus, leading to massive hæmoptysis and death.

DISGERMINOMA OF THE OVARY

By Ross Mitchell, M.D.

Winnipeg

Mrs. N.H.D., aged 27, primigravida, was referred by Dr. J. S. Holowin from a rural area in Manitoba on February 12, 1943. She had been seen by Dr. J. E. G. MacKenzie also. The accompanying diagnosis was toxæmia of pregnancy, and the calculated date of confinement was March 27. Five years previously her appendix had been removed. During her pregnancy she felt well save for occasional dizziness, but when examined on February 12 her blood pressure was 162/92, there was gross albuminuria and œdema, and the circumference of the right calf was ¾ inch greater than that of the left. Her weight was 184½ lb., a gain of 44 lb. during the pregnancy. External pelvic measurements were larger than normal. The Wassermann test was negative, hæmoglobin 70. She was admitted that evening to St. Boniface Hospital. X-ray showed a fetus of moderate size in right occipital position.

Treatment by the usual methods failed to relieve the toxæmia. Vaginal examination under anæsthesia revealed the presence of a large firm mass in the pelvis which could not be dislodged and which made vaginal delivery impossible. The cervix was pushed to the left and lay at the upper border of the symphysis. Under local anæsthesia and cyclopropane a low Cæsarean section was done on February 22, and a female child weighing 5 lb. 14 oz. delivered. The mass was seen to be a large whitish-grey tumour of the right ovary of doughy or rubbery consistency, pressure of which together with the pregnant uterus on the pelvic veins explained the enlargement of the right leg. Because the patient's condition at the end of the Cæsarean section was only fair it was decided not to remove the tumour at this time.

Convalescence was stormy with high irregular temperature, heavy sweats, cough and prostration. On March 2 her blood count showed 3,300,000 erythrocytes, hæmoglobin 43, achromia, poikilocytosis and microcytosis, and 30,200 leucocytes. On March 1, 250 c.c. citrated blood was given and a like amount the next day. Sulfadiazine was administered from February 28 to March 18. Dr. F. G. Allison saw her in consultation on March 7 and found her heart and lungs

normal. Five hundred c.c. citrated blood was given on March 8, and 500 c.c. on March 9. The blood count on March 8 was erythrocytes 2,580,000, hgb. 44, colour index 88, leucocytes 20,100. A week later the red cells numbered 2,860,000, hgb. 50, white cells 13,400; on March 22, 2,960,000, hgb. 52, white cells 12,000, and on March 29, 3,170,000, hgb. 60, leucocytes 8,300. On that date there was a trace of albumin in the urine with a number of finely granular casts.

She left the hospital on March 31 to return to her home with her baby who weighed 7 lb. 3 oz. The patient was instructed to continue taking ferrous sulphate gr. 5 t.i.d. On May 4 she wrote that she had severe headaches and that her hæmoglobin on April 20 was 47. On June 30 she came to my office. Her baby weighed 12 lb. Headaches were still severe and she did not sleep well. Blood pressure was 176/110. She had menstruated on June 9 for the first time since the Cæsarean section. There was marked frequency of urination and a trace of albumin. The circumference of the calves was now equal. The tumour, reaching 19 cm. above the symphysis, was as large as a six months' pregnancy and pushed the cervix high up to the left.

She was admitted to the Winnipeg General Hospital, and on June 5 the tumour was removed under gas anæsthesia. Adhesion to the rectum and sigmoid caused difficulty. The left tube and ovary were normal and were not removed. Nine hundred c.c. of 5% glucose in saline was given intravenously on the table and 200 c.c. blood on return to the ward. On July 6 she had 250 c.c. of blood. On July 14 the leucocytes numbered 9,550, hgb. 56 or 8.59 gm. per 100 c.c., erythrocytes 3,560,000, colour index 0.8, slight hypochromia. X-ray of the chest was negative. Hæmoglobin on July 20 was 61%. On July 22 when she left the hospital her weight was 120 lb.

Dr. T. H. Williams, the acting pathologist, reported on the specimen on July 21 as follows: "a nodular mass measuring 21 x 15 x 14 cm. Included in it is a fallopian tube measuring 7 x 1 cm. Section of the mass shows it to be nodular throughout with areas of degeneration some of which are hæmorrhagic, others yellowish and necrotic. Tumour weighs 2,370 gm. (1½ times the size of the adult liver). Microscopic: actively growing malignant tumour. Granulosa cell? Carcinoma?"

On this report the patient's husband, but not the patient, was informed of the condition and he was instructed to have her return in three weeks for deep x-ray therapy. In the interval the sections had been sent to the University of Minnesota and Dr. Robert Meyer reported that the tumour was a disgerminoma.

The question then arose; how malignant was the tumour? On this point authorities differ. A. H. Curtis[1] states:

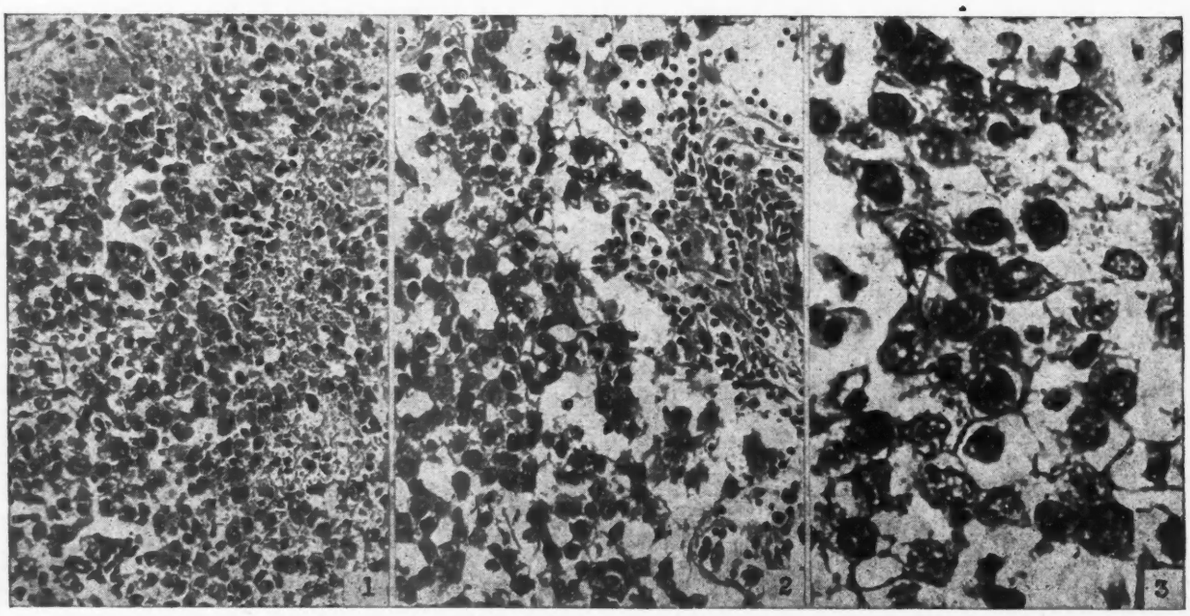

Fig. 1.—Sheet of large epithelial cells having no special pattern, with strip of necrotic tissue left of centre. Scattered lymphocytes throughout. x 200. **Fig. 2.**—Tumour cells having irregular tubular pattern. Arteriole at right with lymphocytes in wall. x 250. **Fig. 3.**—Tumour cells showing large nuclei, vesicular degenerating cytoplasm and definite cell membrane. x 750.

"Prognosis is serious. In 140 cases followed with care, 31 patients were cured, 50 died; insufficient time had elapsed to determine the ultimate outcome in the remainder. Disgerminoma is peculiarly radiosensitive. It is agreed that surgical removal is indicated, that bilateral removal of the ovaries is the procedure of choice, at least with the more rapid growths and that postoperative treatment is essential."

Crossen and Crossen[2] believe that disgerminoma is relatively benign. E. Novak[3] states:

"There is no question as to the malignancy in general though there is much variation in individual cases. As a group disgerminomata are less malignant than the granulosa cell cancers but more malignant than the arrhenoblastomas . . . the first group (tumour capsule intact, no extension beyond the ovary) naturally offers the most favourable prognosis. It is in this group that unilateral operations have often been successful in curing the patient, through the hazard of recurrence is not by any means eliminated."

Long, Ziskind and Storck[4] consider that no clear conception of the degree of malignancy has yet been gained and that at present the most valuable criteria of the malignancy of individual tumours are clinical. Simple extirpation, in their opinion, has come to be considered good judgment on the part of the surgeon who finds at operation a solid non-adherent ovarian tumour. Seegar[5] states that these tumours have a mortality between 35 and 60% with a slightly higher rate of recurrence and metastases. Sailers[6] believes that clinically the best indication of the degree of malignancy is the amount of infiltration of the tumour capsule at operation or extension into the adjacent lymph nodes. Moore[7] states that disgerminoma is relatively benign and exerts no hormonal influence.

Schiller[8] declared that the disgerminoma of young girls is benign in a high percentage (70 to 90) of cases. The disgerminoma of men is malignant in nearly all cases. The majority of disgerminoma in women are bilateral; according to recent statistics more than half of them. He is emphatic that most of the unilateral disgerminomas are benign. Cases of patients, who after a simple extirpation of a unilateral disgerminoma, had perfect health prove the fallacy of radical therapy based upon an unjustified diagnosis of malignancy. Meyer[9] who first suggested the term disgerminoma because of its frequent occurrence in hermaphrodites and sexually immature women states that the tumour may attain an enormous size and thereby destroy the ovary and even the uterus, but if operated upon the prognosis is good. Many cases, he said, remain permanently cured without recurrence.

Following the removal of the new growth Mrs. N.H.D. felt much relief. Her second convalescence was smooth. She was young, and had been married only a little over a year at the time of the second operation. In the face of the division of opinion as to the malignancy of disgerminoma, and since her tumour came within the group which offers the best prognosis, it was decided not to remove the left ovary and tube and not to proceed with x-ray treatment. On October 13, 1943 her blood pressure was 162/94, weight 136, the wound had healed well. Pelvic examination showed a normal uterus and clear fornices. The blood count showed 5,230,000 red blood cells, hgb. 84, morphology approximately normal, leucocytes 14,600. On December 7 her weight was 145, hæmoglobin 85, periods regular, no headaches or night sweats, pelvis normal.

On November 1, 1944, she wrote that she was again pregnant, that she consulted Dr. MacKenzie each month, and that he had found her blood pressure and urine normal, and that she felt well all the time. On December 6 her blood pressure was 130/90, weight 175. She was delivered on December 13 of a boy weighing 7 lb. 9½ oz. at the Winnipeg General Hospital.

On June 4, 1945, her blood pressure was 164/92, weight 153 lb. The pelvis was normal, menstruation regular with no pain. The blood count gave 5,370,000 erythrocytes, hgb. 95, morphology normal, leucocytes 10,000.

There are several points of interest. One is that the final diagnosis of the nature of the tumour was made by Dr. Robert Meyer[9] who before the American Gynæcological Society in 1931 gave the classical presentation of disgerminoma. Another is that her stormy convalescence after the Cæsarean section was attributed to sepsis, but Long, Ziskind and Storck[4] point out that degeneration of the fast growing mass frequently occurs and is sometimes responsible for fever, night sweats and leucocytosis up to 20,000 cells per c.mm. Other more infrequent symptoms, some of which are due to pressure, others to malignant extension, are renal colic, urinary frequency, respiratory embarrassment, diarrhœa, vomiting, ascites, anæmia and loss of weight. A third point of interest lies in the rarity of the neoplasm. Curtis[1] states that less than 250 cases have been recorded in the literature, most of them described from specimens which have been preserved and have been discovered in a review of collected material. Barzilai[10] declares that not more than 200 cases have been pub-

lished. Seegar[5] states that the incidence is under 3% of all malignant ovarian neoplasms.

Still another point is in the decision to rely on simple extirpation of the tumour. Too short a time has elapsed before it can be said that the decision was justified, but in two years she had had a normal pregnancy and labour and has been in good health. Premature menopause in a happily married woman with only one child is a heavy price to pay for a condition of only doubtful malignancy.

SUMMARY

A case of unilateral disgerminoma of the right ovary associated with pregnancy is reported. Cæsarean section was first performed and a simple extirpation of the tumour was done four and a half months later. Since that time she has given birth to another healthy child and when last examined two years after removal of the mass she appeared to be in good health. The degree of malignancy of disgerminoma is discussed.

My thanks are due to Dr. Daniel Nicholson, pathologist of the Winnipeg General Hospital, for the preparation of the microphotographs.

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404 Medical Arts Building.

THYROTOXICOSIS, DIABETES AND THIOURACIL

By C. Keith Stuart, M.D.*

Hamilton, Ont.

Since the advent of thiouracil, it has been said by some that we now have the medical equivalent of surgical removal for the treatment of toxic goitres. The complete veracity of this statement is open to some considerable doubt. Such a conception has probably been engendered by the fact that thiouracil does decrease basal metabolic rate, increase weight, and improve strength. Clinically, however, stigmata of toxicity often remain, such as inability to return to full activity, persistence of a toxic pulse and increased sensitivity to nervous stimuli. These remnants are found lingering in spite of a normal basal metabolic rate. Subtotal thyroidectomy promptly removes these vestiges of toxicity. In the light of such evidence, it appears that surgical removal accomplishes the restoration of an equilibrium, probably endocrine, which is not possible with the drug thiouracil.

From this, one could postulate with justification that the increased basal metabolic rate is not the sole factor in the production of the syndrome of thyrotoxicosis. Much evidence is accumulating in support of this view. In hyperthyroidism, the production of increased amounts of pituitary thyrotropic principle is well established.

In the past few years, attention has been attracted to the rôle of the pituitary in the production of diabetes mellitus. It has been shown that in dogs, permanent or transient diabetes can be produced by injecting pituitary extracts. The severity and the duration of the resulting hyperglycæmia are dependent on the dose and length of time over which the extract is administered. Though somewhat more difficult to ascertain in the case of the pancreas, it seems that pituitary hyperactivity is involved in producing both diabetes and thyrotoxicosis. The possibility that a common factor may be responsible for both manifestations provides a probable answer to some perplexing problems.

It has for some time been appreciated that thyrotoxicosis will seriously aggravate diabetes. On occasion, it will also cause a hyperglycæmia which has all the characteristics of a true diabetes mellitus. In many of these cases thyroidectomy has alleviated or completely relieved the hyperglycæmia. The deduction then is drawn that the increased basal metabolic rate or the increased activity of the anterior pituitary has an inhibitory influence on the pancreas. The following case is reported in support of the contention that it is the pituitary activity and not the increased basal metabolic rate that influences the blood sugar levels in thyrotoxic patients.

Miss M.G., aged 39 years, seen on April 23, 1945, complaining of palpitation for four years, worse for one month; weight loss of fifteen pounds; weakness on climbing stairs; nocturia for four weeks with some polydypsia. Physical examination showed a diffuse, firm enlargement of the thyroid, left side 1½ times normal size, right side twice normal size. Heart three plus overactive. Blood pressure 168/82/74. Hands hot.

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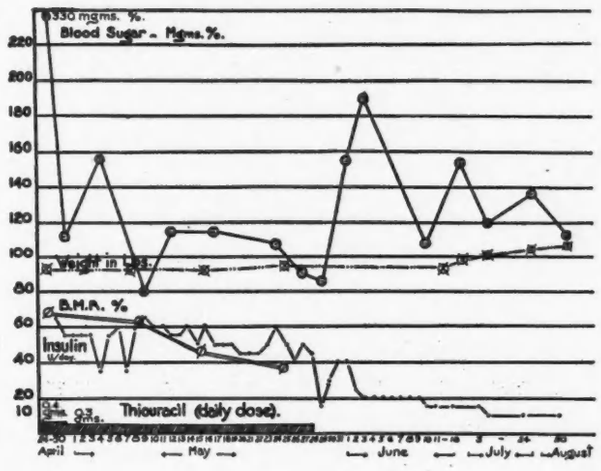
moist and with one plus tremor. No previous iodine treatment. April 24, 1945, basal metabolic rate plus 67%; blood sugar 333 mgm. %; 4 plus sugar in urine.

Patient was hospitalized, placed on 2,150 calorie diet with protamine zinc insulin, units 20, plus regular insulin by test. The daily requirements are shown in the accompanying chart. Also shown are the blood sugar levels and thiouracil dose. Of special significance is the weight chart which showed a gradual increase and the basal metabolic rate which decreased from plus 67% to plus 39%.



SUMMARY

A case of thyrotoxicosis and diabetes is reported in which, during treatment with thiouracil, weight gain and decreased basal metabolic rate is not accompanied by a significant drop in insulin requirements. Four days after subtotal thyroidectomy, the insulin dose decreased to less than half of the average daily requirement during the previous thirty days on thiouracil. It seems well established that thiouracil acts solely within the gland to inhibit the production of thyroid hormone. It has no effect on the production of pituitary thyrotropic hormone. Since a significant decrease in basal metabolic rate was not associated with a significant decrease in the severity of the diabetes, the reverse situation is here suggested to exist. In other words, the increased basal metabolic rate *per se* is not responsible for the aggravation of diabetes mellitus. It then follows that the pituitary thyroid and pituitary pancreatic relation is not favourably influenced by the drug. From the evidence presented by this case, it is concluded that subtotal thyroidectomy is a means of restoring this balance.

CONCLUSION

1. Decreased basal metabolic rate is not accompanied by decreased insulin requirements.

2. Pituitary hyperactivity is responsible for the aggravation of diabetes mellitus accompanying hyperthyroidism.

3. Thiouracil is not a substitute for subtotal thyroidectomy in restoring endocrine balance.

250 Main St. East.

CYSTIC ORGANOID TERATOMA

(Report of a Case)

By Emerson Smith, M.D. and W. J. Cochrane, M.D.

Department of Urology, Royal Victoria Hospital

Montreal

Teratomas of the pararenal tissue although reported appear to be rather rare. Campbell[1] was able to find four such cases in the literature up to 1933.

We wish to add a recent case of an infant aged two months who was admitted to our service with a large tumour mass which had apparently developed to the size of an orange in six weeks' time.

J.P., male, aged 2 months. Admitted to the Pædiatric Department of the Royal Victoria Hospital, on November 16, 1940.

Two days previous to admission the mother had noticed a large mass in the left side of the abdomen. This mass had not been demonstrated at two weeks of age, at which time he was subjected to a complete physical examination by the family physician.

Physical examination.—Patient appeared to be a well developed and well nourished white male infant. There was a visible bulging in the left upper flank. To bimanual palpation the mass was about the size of an orange and of a hard consistency. The remainder of physical examination was essentially normal.

Laboratory data.—Urinalysis: clear straw, albumin none, sugar none. No cellular elements nor casts. Blood count (on admission) white blood cells 15,200. Differential count polymorphonuclear leucocytes 60%; lymphocytes 34%; eosinophiles 2%; monocytes 4%. Subsequent white blood counts showed a return to a normal level of 5,400. Examination of urine for total androgens 0.7 mgm. on two occasions—not raised. Blood Wassermann was negative.

A flat plate of the abdomen taken shortly after admission showed a peculiar distribution of the gas within the peritoneal cavity, all of the bowel having been displaced to the right by a large soft tissue tumour which extended to within one inch of the left iliac crest. In the midst of the soft tumour was an irregular mass of calcium density but no definite formed elements could be made out. X-rays of the skeleton were negative for metastases. In view of these findings the patient was transferred to the urological service for further investigation.

Excretory pyelograms showed normal right kidney shadow and renal pelvis. The left kidney shadow was distorted and pushed downwards.

With the above findings a preoperative diagnosis rested between a Wilms tumour of the left kidney or left adrenal tumour. Accordingly on December 20, 1940, an exploratory operation was done through the left loin, under ether anæsthesia. The left kidney appeared

to be normal. A mass about the size of a large grapefruit was present, situated above the kidney and in the region of the adrenal; no sections were taken. A diagnosis of adrenal tumour was made on the operative findings. Following operation the patient made an uneventful recovery, an intensive course of deep x-ray therapy, 2,600 roentgens in twenty-six doses being given.

Following this the mass definitely receded in size. A flat film taken on March 15 showed the large bowel to have resumed its normal position, and a definite regression in the size of tumour mass. At the time it was noted that there was an increase in calcareous material in the region of the tumour. It was decided in consultation with pædiatrics and x-ray department, that the left loin mass should again be explored.

Operation, March 21. Under ether anæsthesia, through a curved left loin incision the kidney and mass were exposed. The kidney appeared to be entirely normal in appearance. Repeated attempts made to adequately expose the tumour mass were unsuccessful, largely because of the kidney. It was therefore decided to sacrifice the kidney. The tumour mass was the size of a large orange, densely adherent to all surrounding structures. The mass was incised and found to be cystic in character. It contained cheesy material similar to that found in dermoids. Within this cyst was a mass about the size of a lemon which was easily removed. The surface of the cystic cavity was smooth. The cavity was swabbed out with alcohol and the cyst marsupialized. Postoperative diagnosis, dermoid cyst. The postoperative course was uneventful.

Pathological report.—The specimen consists of (1) a spheroid mass of tissue weighing 28 gm. and measuring 4 cm. in diameter. There were several firm nodules in the wall and a small pedicle of attachment. On section, the mass consisted for the most part of a cyst lined by smooth serous tissue and containing about 7 c.c. of opaque milky fluid. Section of the nodules showed them to consist of bone and cartilage. (2) Capsule around tumour. Specimen consisted of a small piece of tissue, one side smooth and serous, the other fibrous with numerous tags. Microscopical examination showed that the mass consisted of various types of tissue. A large part was hyaline fibrous tissue. There was considerable fat, some cartilage, bone and focal areas of calcification. There was comparatively little epithelial tissue, though some small cystic spaces were lined by cuboidal cells, and in one area a small section of skin with sebaceous glands and hair follicles could be identified. For the most part the tissue stained poorly, probably as the result of the deep x-ray therapy. There was no evidence of malignancy.

The anatomical diagnosis was cystic organoid teratoma, a tumour which had probably arisen in relation to the genital ridge and represented a developmental defect.

This child is checked twice yearly. Four years after operation the child is reported to be in good health; weight 39 pounds; height forty-one inches; body functions normal. Good appetite, full activity mentally and physically, and no signs or symptoms of former disease.

Summary and Conclusions

1. A case of pararenal tumour in a two month old infant is reported.

2. The mass in the left loin, peculiar distribution of gas within the peritoneal cavity, together with irregular calcium density in tumour area on x-ray examination, indicated urological investigation.

3. The importance of intravenous pyelography, exploratory operation, and deep x-ray therapy are evident.

4. Successful removal, with survival four years afterwards, is of clinical interest.

5. Histological examination revealed tissue derivations of all germ layers in varying degrees.

6. The general consensus is that these tumours originate within the embryonic germinal fold.

7. Repeated follow-up examinations are advisable and recommended, even though the growth appears to be benign.

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SPECIAL ARTICLE

A REVIEW OF HEALTH CONDITIONS IN CHILDREN IN POST-WAR EUROPE*

By R. R. Struthers, M.D.

Montreal

This presentation is intended to be an account of the writer's experiences in Europe as consultant in Child and Maternal Welfare to the European regional office of the United Nations Relief and Rehabilitation Administration. During the autumn of 1944, visits were paid to various university centres in England and Scotland, and during early 1945, to France, Belgium and Holland. Later in the summer of 1945, a visit was paid to Germany and Sweden; in the autumn of 1945, six weeks were spent with the Oxford University Nutrition Survey team, investigating nutrition of German civilians in the Rhineland at Essen, Dusseldorf and in Berlin. The winter of 1945-1946 was spent in investigating the nutritional condition of children in the Displaced Persons Assembly Centres, under the control of U.N.R.R.A. in Germany. While it is appreciated that this report is an expression of personal opinion based on rather scanty observation, some of the conclusions reached are probably valid, though not supported by documentary evidence.

France

A five weeks' visit to France was paid in January and February, 1945, and during visits to Paris, Lyons, Marseilles and Nice, children in day schools, crêches and maternity homes were examined, and also adolescents who were in the Berliot auto works in Lyons, the children varying in age from the newborn through pre-school

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and school age to adolescence. Unfortunately these visits were paid during the period of most severe distress in France, the first winter of "peace", when there was neither coal, light nor heat nor power in Paris and its use very restricted elsewhere, where we visited; this was associated with an almost universal appearance of chilblains affecting all age groups, particularly children and adolescents.

The following conclusions were drawn from this visit:

Birthweights: The French authorities stated that compared with pre-war levels there had been a decrease of about 400 grams on the average. Neonatal death rates were said to be higher in the Marseilles area, but at the time of our visit were not generally higher throughout France than in pre-war years; infants up to the age of 3, except in Nice, appeared to be adequately nourished and showed no specific nutritional disorder. In the age group 3 to 6, children were somewhat short in height but showed no definite evidence of lack of specific food factors; the age group 6 to 12, showed failure of growth in height, with the ratio of weight for height apparently normal; these children also showed some anæmia, carious teeth with little or no gingivitis, but considerable dryness of the skin; chilblains were very common. The age group 12 to 14 showed failure of growth and of maturation and some keratosis of the skin and laxity of the scleræ. Caries of the teeth was common and quite marked degrees of dental hypoplasia. Age group 14 to 18 showed failure of growth and maturation, but remarkably little dental caries. Some also showed smoothness of the tongue with prominent papillæ at the tips, many had loose scleræ and dry skin. The deficiencies of height and weight in comparable age groups in school children were said to be 2 to 3 cm. in height and 2 to 4 kg. in weight in 1940, as compared with 1939.

Pregnant women showed a considerable degree of gingivitis, and the degree of caries of the teeth appeared dependent on social factors and the number of pregnancies. Few showed loose scleræ, some had moderately dry skins, many showed chilblains. Nursing mothers showed little gingivitis and no serious caries was seen in the younger age groups. Anæmia seemed common to all groups.

Deficiencies.—(*a*) Animal protein. The results of this deficiency seemed to be more psychic than physical if one may judge from the investigations of protein levels as published by the Institut d'Hygiène; this would cause one to wonder whether the degree of apparent anæmia might not be related to the deficiency of animal protein.

(*b*) Fats. Deficiency of fat alone or in association with fat soluble vitamins may or may not be related to keratitis and loose conjunctivæ. However, the suggestions made by one investigator that the vegetable fats which were present in the diet were possibly adequate in amount to fill ordinary needs for fat, was met by the retort that the French people were not accustomed to receiving their fats in this form! Conversations with French physicians in various areas, produced, as one would expect, a variety of opinions. This was no doubt due to the physicians' individual experiences and to the degree of deprivation of food in various districts dependent on the degree of disruption of rail transportation. However, at the time of our visit, it was concluded that neonatal birth weights were very slightly affected by the deprivation of the mother and neonatal mortality was not apparently increased. It was striking that undernourished mothers tended to have short labours; even primiparous mothers had labours of only 3 to 6 hours; all the mothers were anæmic, on the average showing 3½ million red cells per c.c. and 11 grams of hæmoglobin. The average red blood count in Paris in February 1945 was 4.2 million and the women on the streets appeared chlorotic.

TUBERCULOSIS

Tuberculosis in France has always been a major medical problem. Sanatoria beds in France total about 30,000 for an annual death rate of about 60,000, that is a ratio of about half a bed per annual death. This, of course, is something less than half the number of beds per death available in Canada, and the failure to hospitalize and isolate open cases of tuberculosis is no doubt related to the high annual death rate. This does not, however, account for the rather exaggerated stories of tuberculosis among French children which were broadcast from France during the period of German occupation. While there was undoubtedly an increase in tuberculosis among children during the early years of the war, particularly in cases of tuberculous meningitis and adult forms of tuberculosis among children, and vice versa, in the appearance of childhood types of tuberculosis among adults, such as meningitis, cervical adenitis and epididymitis, this actual increase by no means reached the proportions which we were given to understand were occurring in France.

Much of this reported increase was due to the system of rationing food instituted by the Germans, who permitted extra food to be allocated to those suffering from tuberculosis; hence, the father of a family would become exercised about the possibility of tuberculosis in his children and would take them to his family physician who, following a medical examination of more or less completeness, would certify that the children were suffering from tuberculosis and therefore should have extra rations of food. As was to be expected, we received reports that 75% of the children of France had been certified as suffering from

tuberculosis! Needless to say the rate of recovery was extremely high.

NUTRITIONAL AND OTHER ASPECTS

On the whole, children in France were extremely well protected during the occupation. It must be appreciated that our visit, after the liberation in 1944, was two to three years after the period of disorganization which followed the fall of France in 1941. During that period, there was considerable starvation with a relative increase in neonatal death rate and the death rate among infants and the aged. However, after the first few months and continuing until the first winter after liberation, food was relatively adequate, vitamins were supplied at the expense of the State and, under the Vichy régime, school kitchens and school meals were provided in all the large centres; summer vacation camps were established for school children and food was relatively abundant, with the fall in the death rate among children and the very sharp rise in the birth rate. However, at the time of our visit, when disorganization of transport was complete, local shortages occurred in many communities, particularly in Nice, where we did see undernourished infants in the hospitals and children in the schools, because insufficient milk was available. There was no meat and no fat and barely sufficient wheat and flour to maintain life, let alone health. This may be summarized by quoting from my report of our Lyons survey.

"The nutritional situation there was the same as in Paris, many well nourished infants, but lack of milk for those over 3 years of age and lack of proteins and fat. There is no anæmia, if one considers the normal red blood count in France to be about 4½ million, and there were no vitamin deficiencies. There is some failure of growth and height in children and failure to gain in weight. The Chief of the Department of Hygiene believes also that the present situation is the worst of the war, not even potatoes being available in Lyons." (My own opinion was that children's weights were normal for heights, but that heights were not normal for age, when compared with the standards we are accustomed to use in America.) "Barter, the selling of cattle, furniture, and savings to live on the black market where prices are at least ten times the fixed price, but where food is available, is a common practice. The poor and the low wage classes live by barter, the renting of rooms, the sharing of food, assistance in kind from their employers and by stealing. A generation of thieving children is growing up, to whom thieving is the natural way of life and who will steal anything. The striking thing is the small stature of the children, though we were unable to determine whether this is a racial, economic or nutritional phenomenon. On the whole, youths are short in stature and most of them anæmic in appearance."

There was evidence of malnutrition only in the older school children and quite definitely among adults and apprentices. The mothers suffered progressively with the number of children in the family, depriving themselves in favour of their offspring, of their rationed foods. Chilblains were almost universal; one physician stated that she secured excellent results in the treatment of chilblains following the administration of testosterone.

The French had a problem in nutrition undoubtedly, but of quantity due to lack of supplies rather than to quality or to any specific food factor other than lack of animal proteins and fats, of which there is constant repetition. The lack of "comforts" such as chocolate, biscuits and milk, either of which would have added greatly to the goodwill and morale of the population, was spoken of frequently.

In Marseilles we had the opportunity of visiting the Children's Hospital, under the direction of Professor Giraud; this authority made two observations concerning the health of children in Marseilles which were of interest and rather surprising. (1) That rickets is prevalent in Marseilles because infants are housed all winter due to the cold, and again all summer because of the heat, so that a severe form of rickets occurs in spite of the Mediterranean sunshine. This observation he confirmed by showing several cases of rickets under treatment in his hospital. (2) That congenital syphilis is common in Marseilles and that it responds satisfactorily to bismuth and sulfarsenobenzol by injection and mercury by mouth. (At one Marseilles hospital a baby was seen receiving arsenic by mouth—Fowler's solution—as a specific therapy, though there was no clinical evidence of syphilis.) One would judge that the diagnosis of syphilis in France is greatly exaggerated in importance and frequency.

Many of the children in all the age groups examined, suffered from chilblains. Those who had passed the invasion period on farms in the country, to which they were sent when our bombing attacks became frequent and severe, were in better nutritional state than those who had remained in the city. Nowhere was there apparent to me any serious evidence of severe psychic disturbance as a result of the war experiences of these children. On the other hand, school teachers and doctors in France were persuaded that the lack of attention in school and lack of continuity of effort by children was due to their nutritional deprivations, particularly of proteins. As the same phenomena have been observed in America and Canada and possibly increased in frequency as a result of the war, I would hesitate to accept the statement that this condition is nutritional in origin.

Amenorrhea among adolescent girls has been noted in many of the occupied countries of Europe. Professor Chevalier of the Institut d'Hygiène, Paris, has made an extensive study of this phenomenon and has proved to his own satisfaction that this is not a purely psychic phenomenon, but is allied to nutrition. He has published the result of his study conducted in a school for girls and showed that amenorrhea was relieved in a comparatively short time by the introduction of an increased ration of bacon and cheese, giving a higher intake of high

grade protein, to which he gives credit for the curative result. However, as many other factors were altered at about the same time, it is difficult to assess the validity of this result.

BELGIUM AND HOLLAND

A visit was paid to Belgium, including Brussels, Liège, Louvain and Waterloo in March 1945 and a short visit to that portion of Holland which had been freed in the early spring of 1945, particularly in Eindhoven.

In Belgium there was present very little evidence of serious nutritional difficulty as judged from the nutritional state of children coming from various social strata. There was a shortage of milk for children over the age of three; to judge from hearsay evidence, the rationing situation as well as heating, appeared to be improving. There was then no evidence of any epidemic disease. As in France, there was questionable evidence of increase in nutritional disorders in children and in the infant death rate and tuberculosis during the early period of German occupation, *i.e.*, 1941-1942. We were told that maternal nursing is not carried on for as long a period of time as in pre-war days. Due to lack of satisfactory milk supply, the artificial feeding of infants was a hazardous procedure.

In that small portion of Holland which had been liberated, the same situation was reported. It appeared that children under the age of 3 had been fairly well protected, that older children and adolescents had in some instances failed to gain satisfactorily in weight. This was later borne out by the results of examinations of older children who were brought from liberated Holland to England for recuperation. These children showed results of a recent acute episode of starvation in that they had either failed to gain in weight or had actually lost weight during the period of their starvation and had relatively failed to gain in height. It would appear that the cessation of growth in height in children is one of the first evidences of undernutrition.

Maternal nursing in Holland also tended to be of short duration and the artificial feeding of infants, because of lack of an adequate milk supply and lack of soap resulted in a high infant death rate among the artificially fed. During early 1945, the infant mortality rate in Holland increased from the level of 40 per thousand to 60 or more per thousand. It will be remembered that the lowest infant death rate reported in the world, is New Zealand and that before the war Holland had the next lowest. The rise in infant death rate to 60 per thousand in Holland, can be regarded as catastrophic and brings the death rate in Holland almost up to that still pertaining in Montreal. During our stay in Holland, judging from reports made available through underground sources, famine conditions and a very high infant mortality rate were prevalent in occupied Northeastern Holland and famine œdema and sudden death occurred frequently among the starving. Of this, during our short visit, we saw none.

To return to Belgium; it was reported that there were fewer large babies born in Belgium during the war, than in previous years, but that the infant mortality rate had been reduced. However, prematurity and miscarriages were more frequent in country districts and maternal nursing failed after the first two or three months. This, however, was probably not the result of starvation, as we had been led to suppose, but was due to the hard physical labour of women in the country working in the fields and the desire of the young mother to feed her baby artificially so that she might return to her previous occupation. It would appear that the same economic and social factors which influence the amount of maternal nursing on this continent, also play their part in Europe. Amenorrhœa in girls was not reported by the Belgium physicians as being frequent, and strangely enough, as compared with France, chilblains were relatively unknown.

It is very difficult to interpret the opinions and results either oral or published as given by continental physicians. (This is not a unique experience). For instance, one prominent pædiatrist in Brussels stated categorically that his hospital had been allowed adequate supplies during the war under German occupation and continued to function as usual in the care of infants and children from Brussels and from the country. Both food and heat had been adequate. The only interruption occurred during the bombardment when the nurses in training all departed for their homes outside the city. This physician stated that there had been no depreciation or alteration in the nutritional standards of nurses taking their training in his hospital, a modern institution of 60 beds. He was of the opinion that infants had not suffered at all nutritionally, school age children very little and adolescents only slightly during the occupation, though at the time of our visit both adults and adolescents were suffering from lack of food, due to the chaos in transportation. He stated that scurvy and rickets had not been more frequent in Brussels during the war. He further believed that the percentage of maternal nursing had increased with no increase in infant mortality and that development of children had been normal. According to him, birth weights were at their usual level and that while tuberculosis had increased in frequency in 1941, by 1945 it had returned to almost pre-war level.

In Holland, on the other hand, where a day was spent with the local pædiatrist in Eindhoven, we were told that while there had been no increase in vitamin deficiency disease in children and no increase in tuberculosis, there had been an increase in the number of sick

babies suffering from "dyspepsia and atrophy" and from tuberculosis and an increase in the death rate of small infants admitted to the local children's hospital. The wards of this hospital were crowded. There was noted the lack of cubicles and isolation technique, and cross infections were rife and there were many cases of diarrhœa and vomiting, furunculosis and otitis media. Treatment was carried on by means of intravenous blood and plasma, lactic acid milk feedings, and protein milk after an initial period of 24 hours' starvation. The babies were admittedly doing badly and the hospital presented the old picture of a ward full of athreptic infants suffering from cross infections.

In Holland there was an apparently marked increase in the frequency of Gee Herter or cœliac disease during the war. Failing the customary diet of bananas for these infants, they were being fed a diet of stewed apples, scraped meat with no fat and no carbohydrates. Some investigation was being carried on, in that these infants had had estimations of the total fat in the dried stool, but as in most centres in Europe, with the absence of recent English and American literature, newer methods of treatment were unknown.

The high morbidity and increased death rate among the artifically fed in Holland at that time appeared to be due to the lack of properly supervised milk supply and the lack of appreciation of the safeguards required in the use of cows' milk and the preparation of infant feeding. This presents a different aspect of "famine" which one must consider in assaying the facts of starvation in any country. Due to the lack of adequate calories, the population is tired, slow-moving and unable to work. As a result, less work is done, less coal mined, fewer trains run and transportation breaks down, so that there is inadequate coal for the heating of homes, for the pasteurization of milk, for the cleaning of clothes, and there is throughout Europe a wide spread lack of soap. Hence babies are fed unclean raw milk, develop diarrhœa, enteritis, furunculosis, upper respiratory infections and otitis media and die from intercurrent infection. The picture of famine as regards infants and children is not simply starvation due to lack of calories but is the picture of the end result of inadequate nourishment for the whole working population.

Quoting from a report of a Committee on Nutrition, under the chairmanship of Dr. Bastini of Antwerp, it is noted that polyuria, famine œdema and low blood urea levels were noted in 1941 and 1942. This disappeared for a time and re-appeared in the late months of 1944 following transport disorganization. Low blood calcium levels without clinical manifestations were found in some instances. Occasionally there were muscular cramps and osteoporosis of bone, though clinical tetany was rarely manifested. The mortality from tuberculosis rose about 50% and the finding of tuberculous glands in adults and the aged had become frequent, also "galloping consumption" occurred frequently, and rapidly progressing laryngeal and genito-urinary tuberculosis occurred in the young decades. Skin and mucous membrane tuberculosis became common in 1941 and 1942 and it was common to see progression of previously stabilized cases of pulmonary tuberculosis.

In a more recent visit to Brussels and further conversations with pædiatrists there, one is led to the conclusion that Brussels is very rapidly returning to its pre-war state and that almost all the evidence of previous German occupation have disappeared.

Dr. R. B. W. Ellis, of Guy's Hospital, London, recently published (*Archives of Diseases of Childhood*, September, 1945) a study on the growth and health of Belgian children, and he concludes that the long-sighted policy, adopted from the beginning of the occupation, reflects the greatest credit on those responsible for the welfare of children in Belgium. With the exception of rickets, deficiency diseases do not appear to be of exceptionally high incidence. While there has been a steady and substantial improvement since 1942, there was evidence that the average values for height and weight in 1944, were still below those for 1939. Adolescents suffered more than the younger age groups and there was some evidence to indicate retardation of puberty in a significant proportion of those living at home in a working class community. The failure to gain normally in height and weight was most frequently seen in boys in employment aged 14 to 16.

During an assignment to Germany in June and July 1945, an opportunity was presented of examining some of the victims of Belsen concentration camp who were being moved from Germany to Sweden for 6 months' convalescence in that country. These unfortunate people, of whom 10,000 were moved, showed, of course, at that time all the disabilities of concentration camp life associated with starvation, maltreatment, infectious diseases, such as typhoid and dysentery and all the recognized manifestations of tuberculosis. The striking clinical picture, in addition to the odour of stale fæces, which was characteristic of Belsen and other concentration camps, was the facial picture of intense anxiety and malnutrition. On the clinical side there was the striking pallor and emaciation, staring eyes and poor teeth. Strangely enough there was no definite striking specific deficiencies, though there were some suggestive instances of pellagra and beriberi. Œdema of the feet, characteristic of famine, keratosis of the skin, fibrillation of muscle and tender calves were common. However, there were no characteristic changes suggesting ariboflavinosis and no scurvy, but after

a month's care by the British army, after the liberation of Belsen camp, the degree of emaciation in some was terrible. All the usual manifestations of pulmonary tuberculosis were present in many patients, severe degree of cavitation, pleurisy with effusion, tuberculous adenitis, tuberculous peritonitis and meningitis.

Following the transfer of these patients to Sweden by ship, they were housed in emergency sanatoria and cared for at the expense of the Swedish Government, who provided not only housing and accommodation, but medical, nursing, and laboratory services and a diet with a profuse supply of milk and eggs, totalling about 4,000 calories per day. Under this regimen these unfortunate people, the majority of whom were Polish Jews, have done extremely well nutritionally, most of them have adequately arrested their tuberculosis and are now, in large measure, ready to return to their native lands. Of Belsen camp itself, I will say little. The death rate among children had been high, so that comparatively few children below 'teen age survived. Some 250 ill children were found in the camp and about an equal number of well children. At the time of my visit to the camp on July 1 there still remained about 150 children in the hospital, most of them convalescing from dysentery and typhus, and about 60% of them with positive tuberculin reactions. These have, on the whole, done very well.

During this evacuation of sick from Belsen camp, I was given, through the kindness of the Swedish Government, an opportunity to visit Sweden, where some two weeks was spent in company with a senior officer of the R.A.M.C., looking into the excellent facilities provided in that country for the care of concentration camp victims. While all forms of food were strictly rationed in Sweden, there was, of course, no evidence of nutritional disorder among children. The population of the children's hospital in Stockholm showed no unusual characteristics when compared with the children's hospital population in Canada. Conversation with various Swedish pædiatrists in Sweden confirmed the impression that Swedish pædiatrists are in the van of pædiatric teaching and investigation. A visit to the breast milk centre in Stockholm with Dr. Ulf Nordwall, was most impressive. The Breast Milk Lactarium is situated in a large commercial distributing plant in space provided by the local milk distributor. All the equipment has been donated by the public. The nursing mothers receive sterile bottles from, and deliver their bottles of breast milk to, the milk shop. It is then brought to the pasteurization centre by the roundsman, who delivers the cows' milk from the central pasteurization plant. At the lactarium the milk is tested, pooled and pasteurized and then sent out to the various hospitals in the city who desire breast milk for their premature infants and sick babies. The lactarium is equipped to process 400 litres of breast milk a day, has a staff of two full time and two part time trained nurses who actually carry out the processing of the milk, and a part time physician who does the physical examination of the donors. The lactating mothers are advised of the existence of the breast milk centre by the hospital where they are delivered and by their private physicians. The donor mothers receive 4 kroner per litre for their excess supply, which is sold to the hospitals and to the mothers of sick infants, on a doctor's prescription, at a cost of 6 kroner per litre.

Later in July, 1945, an opportunity was presented of looking into conditions of health of children in Luxembourg. In Luxembourg there is no special children's hospital, though children are cared for in nurseries, maternity hospitals and in various crêches and boarding homes by Roman Catholic nuns. The physicians of Luxembourg were very insistent on the need for a supply of powdered buttermilk and unsweetened condensed milk for babies. If the local fresh milk supply is adequate, it is not trustworthy, as in Holland, and outbreaks of enteritis are blamed on the local milk supply, since, due to the lack of coal at that time, pasteurization plants were idle. The local pædiatrists know how to use lactic acid milk, but seem to be unaware that parenteral infection is a cause of diarrhœa and dehydration. In Luxembourg, infant mortality during the first year rose from a figure of 70 in 1939 to 80 per thousand in 1941 and only 50% of the babies in the local maternity hospital were being breast fed at the age of 10 days. The figures for birth rate and infant mortality from 1937 through 1941 suggested a falling birth rate and an increase of infant mortality. This latter is probably partly accounted for by the unemployment prevalent in certain slum areas in the industrial district where poverty, ignorance and dirt were prevalent with relatively high birth rate and correspondingly high death rate. On the whole, however, in a small community such as Luxembourg, child welfare problems are not numerically great and child welfare services appear to be somewhat behind the standards which one ordinarily associates with well educated communities. Many of the difficulties were due to shortage of coal supply; a lack of infant feeding bottles and nipples which had almost disappeared from Europe, with consequent outbreaks of enteritis in the various Roman Catholic church day nurseries and crêches. Even where milk was pasteurized, it was returned to the same large tins and sent out in bulk unrefrigerated to local milk shops for distribution, where it was, no doubt, again contaminated. One can understand the anxiety of the pædiatrists of Europe to have an adequate supply of powdered milk at their disposal, when one appreciates the lack of care

which is commonly seen in the handling of fresh raw milk throughout the continent.

NUTRITION IN GERMAN POPULATION

A most interesting period of six weeks in September and October, 1945, was spent with the Oxford Nutrition Survey group under the direction of Dr. Hugh Sinclair. A nutrition survey among German civilians was conducted in the Rhineland, Dusseldorf, Essen and in Berlin, in the British zone, to determine, if possible, the presence of nutritional disorders and malnutrition in the German population. During a period of six weeks, some 35 hundred German civilians were examined by Dr. Sinclair and myself, with the assistance of several trained dietists and technical laboratory workers, my own particular interest being, of course, the examination of infants and school children as they appeared in the clinics. The situation, as described in the report submitted by Dr. Sinclair to the Control Commission Germany (B.E.) has not of course, improved during recent months, excepting in very isolated instances, and it is to be presumed that the nutritional situation in Germany as a whole will deteriorate comparatively rapidly during the coming months, unless adequate supplies are quickly made available. The report may be briefly summarized as follows:

(*a*) The most obvious deficiency was of energy-producing foods; a daily food intake providing less than 1,500 calories for normal consumers is in the region of starvation. The deficiency of energy-producing foods was most marked in Berlin. The miners and their families in Essen were comparatively well nourished; the best group of the population that was investigated consisted of Nazi women in Berlin, who as punishment were clearing rubble brick by brick, but who were, as a consequence of their occupation, drawing heavy workers' rations, so that nutritionally and economically they were doing extremely well. (*b*) There was definite evidence of deficiency of proteins in all three towns, particularly in Berlin. Nocturia was frequent and famine œdema occurred particularly amongst old persons. Bradycardia and hypotension may also be indications of deficiency of protein or of general undernourishment. (*c*) Fat and fat soluble vitamins were very deficient in the German diet and it seemed extremely probable that serious deficiency of vitamins was developing. This apparent deficiency of vitamin A was substantiated by evidence of low butter consumption, the very low value for caratenoids in the blood, and by the high incidence of poor dark adaptation in the people seen. (*d*) Vitamin D and possibly calcium were deficient in the diet, although they showed almost no active rickets (September, 1945). It is to be remembered that children received vitamin D during the previous winter as a free issue from children's welfare centres. (*e*) Anæmia found particularly in Berlin may be due to a dietary deficiency of iron or to general undernourishment. (*f*) It seemed probable that certain vitamins of the B complex were adequately supplied in the diet, particularly thiamine. Further there was some clinical evidence of deficiency of both riboflavin and niacin. (*g*) Ascorbic acid seemed to be adequate in the diet. This was probably derived from the potato supply at that time was adequate (but failed later in the year).

At the time of the survey, the clinical examination and biochemical results indicated that there was much mild and some severe undernutrition, particularly in the aged. This undernutrition was caused by the deficiency of energy-producing foods, of protein and of fat and fat soluble vitamins. The children on the whole seemed to be very adequately cared for (October, 1945).

During the course of this survey, opportunity was taken to visit the Auguste-Viktoria Kinder-Klinik in Berlin, the Kinder-Klinik in Dusseldorf, and various maternity and child welfare centres, where I was received cordially by the various professors, both of pædiatrics and obstetrics. My conclusions of this survey, as quoted in my notes of October, 1945, were that nutritional difficulties in Germany were essentially those of a caloric deficiency and secondary anæmia rather than of any specific nutritional factor. Few vitamin deficiencies were seen, except some cases of ariboflavinosis, one frank case of pellagra and one case of active rickets in an infant. In several patients examined there was disturbance of night vision and xerosis of the skin, which was a common finding. These abnormalities may be due to deficiency of vitamin A. This opinion is confirmed by Dr. Sinclair's report, quoted above, and the estimation of the presence of vitamin A and carotene in the blood; the latter was markedly lowered in the German civilian population, even when compared with the starved Dutch population examined by Dr. Sinclair following their liberation in May, 1945. There was also evidence of failure of growth as regards both height and weight in German children in Berlin, and their general appearance strongly suggested that the caloric deficiency in children had been one of long standing. This information was reinforced by personal communications, from non-medical personnel who had been prisoners of war in and about Berlin, that during the last year of the war, children in Berlin appeared to have been grievously undernourished.

Since the above survey was completed, several months have been spent in the British occupied zones in Germany, working in country districts and small urban communities. In country districts and small towns there is at present very little evidence of deterioration in the health of the German civilian population, aside from the absence of fat persons, the presence of general pallor of the people and the fairly universal expression of despondency

over the political situation as a result of the overwhelming defeat suffered in the war and the consequent disruption of transportation and lack of assured supplies. As was experienced in other countries during periods of deprivation preceding the war, people in the country districts had secured sufficient to eat. This is not, however, true of large cities where difficulties of transportation and distribution, the lack of ground on which to grow vegetables and the lack of supplies over and above the rationed foods, always tends to produce a more severe degree of undernourishment than in farming communities. This is also at present a picture of Western occupied Germany, where, as you have been told so violently and frequently both in newspapers and over the radio, starvation is imminent. That this is a factual situation I can bear evidence from what has been apparent in such centres as Hamburg, Hanover and Brunswick.

Regarding the condition of newborn children and infants in Germany, the following points were noted: (*a*) That there had been no change in birth weights of babies or in the character of the mother's labour; premature births, however, had been more frequent and missed abortions much more common. (*b*) Babies were breast fed for a maximum of 6 weeks when, due to the lack of adequate maternal nourishment, the breast supply tends to fail. Further, on discharge from hospital 10 days post partum, 60% of the babies in the Dusseldorf clinic were completely breast fed, 20% partly breast fed and 20% entirely artificially fed. (*c*) Anæmia in mothers was a striking feature and the usual blood count at the time of delivery was between 3½ and 3¾ millions. (*d*) There had been, however, no increase in post partum infections in the mothers and no increase in infections among the newborn.

Amenorrhœa among German women in the Ruhr had been very frequent. This however, the Professor of Obstetrics at Dusseldorf considered to be emotional in origin rather than nutritional, caused by the bombing and artillery fire, though the food situation in the Ruhr had been serious for a year past, due to the disruption of transport and lack of supplies. Birth rates in most localities in Germany, due to the rapid shift of population were of little statistical value. No hunger œdema had been seen among pregnant women. As commonly experienced in peace time, the physical condition of the well-to-do pregnant woman was better than that of the clinic patient. The ignorance of the Germans concerning the world food situation was and is abyssmal. When I suggested to them that the inability of the American continent to provide adequate food and milk supplies for Europe was due to the absence of farm labourers in the armed forces or in munitions, the various professors with whom I spoke were quite amazed, and the idea that food was either rationed or in short supply in Canada and the United States was, at the time of which I speak, quite a novel idea. The constant theme of the German civilian population was for more rations, and the German civilians employed by the government of Germany constantly went off work "ill" saying that they needed more food, an effective form of sabotage.

CONDITIONS AMONG CHILDREN

The Professor of Pædiatrics in Dusseldorf stated that rickets is becoming more frequent and is now being recognized in breast-fed infants; a new observation in Germany. However, no other deficiency diseases have been increasing in German children. There was the usual story of inadequate pasteurization of fresh milk supplies, due to the lack of coal. The birth rate in Germany has, of course, been relatively high for many years and one may almost describe it as a country of children who look healthy and well, are well mannered, bright and happy and friendly. Irrespective of their nationality, children are children the world over, and given a friendly greeting, were as affectionate in Germany as in Canada or England. So far German children have not suffered greatly from undernutrition, but unless the present food crisis is adequately relieved, there will be the usual increase in infant morbidity and mortality which was experienced during periods of undernutrition in other occupied countries. At present the infant mortality rate in civilians of the British occupied Germany is between 150 and 180 per thousand, which is more than double the prewar rate. This is probably due to the combination of inadequate milk supplies, inadequate calories, inadequate heating and coal supplies, as well as dysentery, typhoid and infections of the respiratory tract.

During the past winter many of the assembly centres for displaced persons who are under the care of UNRRA, were visited and children there examined. In particular a six weeks' survey was made of assembly centres in all three districts in the British zone. At that time the displaced persons were receiving about 2,200 calories per day (as compared with 2,600 to 2,800 in Britain and 1,500 of the German civilians). This caloric ration has since been reduced to 1,850. The population of these assembly centres consist almost entirely of displaced Polish peasants and of somewhat better educated groups from the former Baltic countries of Estonia, Latvia and Lithuania. From the point of view of food, the most serious discrepancies were supplies of green vegetables and fruit, which were practically non-existent. No frank deficiency diseases have been seen among either the adults or children examined, excepting a rare case of active rickets, and an almost universal pallor among the Polish dis-

placed children. In addition, some shortness of stature among Polish children, though no failure of gain in weight, was also noted. During the winter we had the good fortune to have fairly adequate food supplies as regards caloric intake, with the shortages above noted. Also adequate supplies of vitamins either natural or synthetic were made available, though their distribution sometimes left much to be desired. Fairly adequate supplies of raw milk, all of which was cooked, were available for children up to the age of 3, sometimes up to the age of 6, and occasionally, dependent on the location of the centre, up to the age of 14.

Considerable education in public health, hygiene and the care of infants was carried on in assembly centres through UNRRA organizations of the medical, nursing and welfare services, so that the displaced person when and if he returns to his native land, will be a somewhat better educated individual from the public health point of view, than before his experience as a forced labourer in Germany. In addition, immunization programs against smallpox, typhoid, typhus and diphtheria have been carried out, with particular emphasis on the childhood population of the assembly centres. Fortunately, the winter passed without any widespread outbreak of infectious disease, so that the morbidity and mortality among children in assembly centres has been relatively low; between 70 and 80 per thousand under the age of one year. Part of this mortality is explained not only by the low level of education of the Polish peasants who form the great mass of displaced persons in the British zone, but also by the unfortunate occurrence of unmarried motherhood where, even as in our own community, many of the unmarried mothers do not wish to be burdened with a fatherless child, particularly if there is any possibility of their returning to their own communities of Poland. This is just one of the socio-medical difficulties which occur in the care of displaced persons in Germany and is not peculiar to the British zone!

There is one problem among children in displaced persons assembly centres in Germany, which requires more elaboration; that is the problem of "the unaccompanied child". These are children who have either lost their parents by death in concentration camps or in labour camps or who, in the general shuffle of population, have become separated from their parents on railway journeys or who as a matter of policy, were brought into Germany by the trainload from occupied countries, during the war. These children are now being found in our own assembly centres where they may have been conducted by some of their compatriots or, as in the case of children from Belsen, simply become attached to some more responsible adult and assumed his name, or who are being found in German orphanages or crêches or adopted by German farmers and their families. Of such children, about 12,000 have now been found in the American occupied zone and some 2,000 in the British zone. The determination of the nationality of these children is, of course, a major problem, particularly as some have been a sufficient length of time in Germany to have lost their mother tongue and in many instances would, other circumstances being equal, be happier in their future lives if left with their foster parents. However, all the countries in Europe are jealous for children, the Polish for Polish children, the Russians for Russian children, and so on, and the determination of the fate of these lost children is bound to bring a good deal of heartache and sorrow to many. Legally, as the child is a ward of his nation and flag, their return to their country of origin seems just and necessary. Particularly is this true if one regards them as the heritance of the future for one country, and possibly the warriors of the future for another.

While this problem is not as great as we had been led to expect during the war, it is nonetheless proving a difficult one in peace. Physically these children are on the whole well, though some do show evidences of previous malnutrition occurring in 1941 and 1942. Some are emotionally unstable, as one would expect as a result of the dreadful experiences through which they have gone, others are remarkably stable and mature. This is particularly true of those who have survived the period of war as a result of dependence on their own ingenuity and wit. For instance: during the visit to Munich, on meeting a train in the railway station, we were amazed to encounter two boys apparently about the size and development of a Canadian child of 10, both clad in full Canadian army regalia including hat badges and "red hackles". One was a Parisian aged 14, who was on his way from Canadian headquarters in Oldenburg to Paris, where he hoped to find some relatives. The other smaller boy aged 13, was a Viennese Jew who had also been adopted by the Canadian army and was on his way from Oldenburg to Vienna. They had both decided to go to Paris by way of Vienna to see the country. Both were adequately nourished, completely confident in their ability to look after themselves, practically penniless and anything but downcast in demeanour, travelling without money or ticket or pass on the German civilian railways and making extremely good progress. Europe is apparently full of such self-confident youngsters who, as a result of their experiences are completely self-reliant and living by their wits.

On the other hand, one sees collections of unaccompanied children who have been brought into Germany in groups, as a means of repopulating Germany, particularly from the

Western democracies or the Baltic countries, who have been adequately housed, fed and cared for in German orphanages during the war, and are nutritionally and emotionally in excellent condition. The question of their repatriation is of course one of political expediency.

Having had no personal experience of the health situation in Czecho-Slovakia or Yugoslavia, I can only quote from what I have been told and the reading of various reports, that there is likely to be a severe degree of undernourishment of children in all these areas. Famine œdema and rickets have already been encountered in Yugoslavia during this past winter and famine œdema has been present in Sarajevo where osteomalacia has also been noted. The most acute nutritional situation at present in Europe, I believe, is in Vienna, where the food situation has already deteriorated very markedly, with the probable immediate result of "famine" to all the civilians. Czecho-Slovakia on the other hand, while on short rations, shows, I believe, comparatively little nutritional disorder among the children. This, I am led to believe, is also the case in Italy, where, aside from the presence of active rickets in children in institutions and thus protected from the sunlight, the health of the childhood population is relatively good.

During the last year of the war, an opportunity was presented of studying the various child and maternal welfare departments of several of the large cities in England, where the problem of child care is regarded as a function of government, rather than as a responsibility of the private practitioner as we know it in Canada. It would appear that public education in the proper use of artificial feedings and the necessity of vitamin supplements, has not proceeded as far as on this continent. This is particularly true when we learn that in spite of broadcasts and newspapers, mothers were slow to use the free supplies of orange juice and cod liver oil put at their disposal by the Government, to prevent rickets and scurvy in their children. This is perhaps just another example of the need for public education in the care of children in all communities, and the public distrust or apathy concerning something apparently given free.

Finally it is fitting in sumarizing the health conditions of children in Europe, to quote from a recent publication of the Health Division of UNRRA concerning quarantinable and infectious diseases (*Infant Mortality in Europe*, **4**: No. 8, 1938-1945).

It is of interest to note that the trend of birth rates has been upwards in most countries studied, with the exception of the enemy countries and Belgium. This trend must be remembered in assessing the changes in infant mortality figures.

The outbreak of World War II does not appear to have affected the downward trend of infant mortality in most countries of Europe, until the second or third year of the war. In 1939, of the 22 belligerent and neutral countries studied, only one country, Spain reported a rise. In 1940 there was a sharp increase in two enemy-occupied countries, France and Belgium. From 1938 to 1940 the infant mortality per 1,000 births rose in France from 66 to 92, and in Belgium from 73 to 85. In 1941 both countries recorded a decline, and lower rates continued up to 1944, although somewhat higher than the 1938 figure. Between 1944 and 1945 infant mortality suddenly jumped from 77 to 95 in Belgium. In France the corresponding figures were 77 in 1944 and 105 in 1945 (first half year). The most notable increase in infant mortality occurred in Greece (Athens and Piræus only available) which rose from 85 per 1,000 births in 1939 to 231 in 1942 (the last figure available), an increase of 171%. Figures for Poland are meagre. The infant death rate of 140 in 1938 was estimated to have risen to 250 in 1945, a rise of 78%.

In Denmark the downward trend continued from 1938 to 1944. In Holland the trend was irregular, rising from 34 in 1939 to 43 in 1941 and falling to 40 and 41 in the two following years. No later figures are available for the whole country, but in Amsterdam an infant death rate of 101 per 1,000 births was recorded in the first 6 months of 1945. Bohemia and Moravia varied between 94 and 100 per 1,000 births during the period 1938 to 1944.

In enemy territories Germany Altreich, the rate rose from 60 per 1,000 births in 1938 to 77 in 1942 (the last figure available). In Austria infant mortality was lower than the 1939 figure of 83 per 1,000 births until 1944, when it rose to 88 and almost doubled itself the following year (162 per 1,000 births, provisional figure). Italy recorded a peak of 116 in 1941, falling to 108 in the following year (the last figure available).

The Balkan countries normally present a gloomy picture of infant mortality but up to 1942 there was no evidence of deterioration in the normal position.

In non-belligerent countries, infant mortality showed a tendency to rise in Eire from 67 in 1938 to 79 in 1944. The downward trend was not arrested in Sweden; in Switzerland there was little change in the trend between 1938 and 1944; Portugal and Spain recorded peaks in 1941, but in 1944 Portugal had dropped 10% below the 1938 figure and Spain in 1943 (the last figure available) had fallen by 17%.

In England and Wales there was a small rise between 1939 and 1941, but by 1944 the rate had fallen by 13%, of the 1938 figure. In Scotland the trend was upward to 1941, from 70 to 83, falling to 65 in 1944. Northern Ireland recorded a rise in 1940 to 86 per 1,000 births compared with 75 in 1938, falling to 67 in 1944. It is a well known fact therefore that the birth rate in the British Isles, as in England and Wales in 1938 advanced from 15.1 to 17.5 in 1945, with a drop in infant mortality from 53 in 1938 to 46 in 1944. In Scotland infant mortality has dropped from 70 in 1938 to 65 in 1944 with an increase in the birth rate at the same time from 17.7 to 18.5 and in Northern Ireland a decrease from 75 to 67 and an increased birth rate from 20 to 23.5. In England and Wales the birth rate is higher, the maternal death rate lower and the infant mortality lower, than at any time for many years. With all the horrors and destruction of modern war as seen in post-war Western Europe, the people of Britain to their credit have raised the birth rate and lowered the infant mortality rate to a remarkable degree. While this is indeed noteworthy, it is not unique, for it is said that the birth rate in France during 1943 was higher than at any time during the past 25 years. This, in spite of the fact that one and a half million young Frenchmen were prisoners of war in Germany. One of the good things done by the late Vichy Government, was that active steps were taken by means of education, mothers' allowances, children's allowances, reduction of taxation and so on, to increase the birth rate and lower the mortality rate. Similarly steps were also taken to protect children, particularly by the provision of crèche and school meals for the needy in the larger centres in France. It is unfortunate

that when an evil government is swept away—even their good deeds tend to perish with them and only the evils live on. Throughout the war years apparently many countries improved their children's protective services and did much to apply preventive pædiatrics on a large scale—so that as is true in other branches of medicine—the good accomplished in many respects outweighs the evils perpetrated on infants and children.

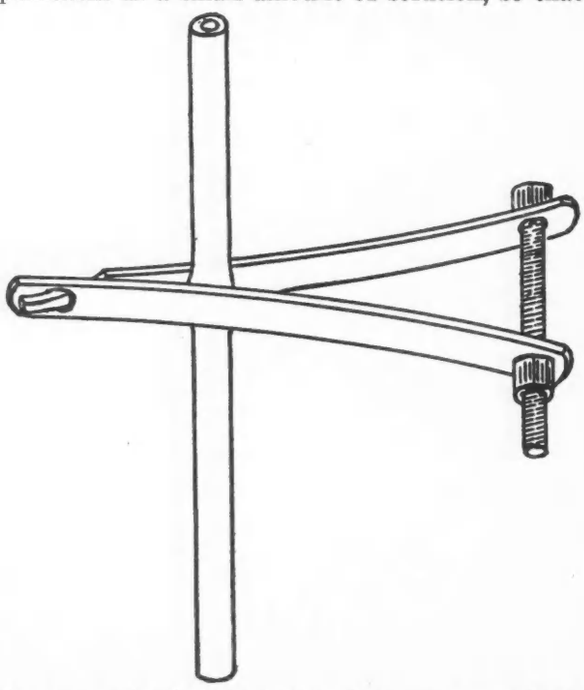
CLINICAL and LABORATORY NOTES

A CLAMP FOR CONTROL OF CONTINUOUS INFUSIONS

By L. C. Bartlett, M.D.

Favourable Lake, Ont.

A new clamp is described which permits easy and accurate regulation of continuous parenteral drip apparatus, such as continuous intramuscular or intravenous administration of penicillin or other solutions. The rate of flow can be easily regulated from 1 drop per minute to as fast as is desired. This permits (1) administration of any given amount of a drug such as penicillin in a small amount of solution, so that



the rate of administration does not exceed the rate of absorption, and (2) a steady and easily controlled rate of administration. A rate of 6 drops per minute from a Baxter drip bulb administers 500 c.c. in 24 hours. Other rates can be calculated accordingly.

This clamp was developed at Berens River Mines, Ltd., by Mr. Edward Donald, master mechanic, in conjunction with the author. It consists of two pieces of spring steel No. 19 gauge, ½ x 3″, arranged in V-shape as shown, with a slot hinge arrangement at one end, and a fine thread screw at the other to force the blades together. It thus employs the principle of leverage, as shown. The clamp can be applied and removed over the tubing by taking apart at the hinge joint. It has given satisfaction in administration of penicillin to Indian patients in remote log cabins where only one daily visit was possible, and in such cases a regular rate of flow was easily maintained.

Thanks are due to Mr. David Halstead of the Engineering Department of Berens River Mines, for preparation of the drawing.

LAURON IN RHEUMATOID ARTHRITIS

(A further report)

By Dean Robinson

Banff, Alta.

Injections of gold alone will not cure rheumatoid arthritis. Gold is just one of the essential forms of therapy. We cannot afford to neglect anything found useful in controlling the course of the disease. For instance, rest in bed, with no other form of therapy has a beneficial effect on rheumatoid arthritis. During this rest, the joints must not be left idle or in the most comfortable position, for they may lose their mobility and even become ankylosed. While the disease is in the acute stage, daily movements must be very carefully done to prevent adhesions. For the balance of the twenty-four hours the painful joints should be in temporary casts.

Rheumatoid arthritis is said to be a self-limited disease. However, we should be very happy when we are able to bring the disease to rest in six months, in place of six years with the resultant crippling and misery. During the six months while the disease is subsiding and the patient is in the hospital, we have an opportunity to prevent crippling and to correct slowly the deformity which has previously taken place. Thus, we see that rest in hospital is another form of essential therapy.

Hot mineral baths (where available) vaccine, vitamins and a nutritious diet should be used in all cases. Also when indicated iron and glandular extracts. Procaine and physostigmine with atropine may be used to counteract spasm. We must remember too, that arthritics are not immune to any disease which afflicts mankind.

Some rheumatoid cases remain active in spite of what may be done for them. When treatment is commenced one cannot say whether the case will be resistant or not. In fact, it may be months before we find that out. So, we try to use every form of therapy we know, right from the start. One should not say, "We will try gold and see what it will do. You may come to my office once a week." Too much valuable time

is lost in this way. You cannot get the sore joint quiescent *too soon*. Use every method you know. If gold alone will bring the disease to rest in six months, then gold *with* rest and other therapy will do the same job in half the time.

In this *Journal* (53: 279, 1945) a preliminary report was made on lauron, a new gold preparation* for the treatment of rheumatoid arthritis. Since then lauron has been used more regularly and one is able to judge more clearly of its virtues.

An early report of 55 cases was given. All of these were treated with lauron. Forty cases (72.7%) showed a lowered sedimentation rate, *i.e.*, responded to treatment.

In the present series 100 cases were treated with lauron. Of these 73 showed reduced sedimentation rates *en masse* to the amount of 988 mm., or an average of 13.5 mm. This agrees very well with our 1945 report.

One hundred cases were given myochrisine. Of these 78 showed reduced sedimentation rates to the amount of 1,083 mm. or an average of 13.8 mm. This shows an apparent slight improvement over the lauron series. However in the early part of the series lauron was used only for those cases who could not take myochrisine for various reasons.

The length of stay in the hospital was about the same in the two series but the amount of lauron was greater than that of myochrisine because the dosage was larger. Larger doses were used but may not have been necessary.

Thus, we have two forms of gold, both equally efficient but differing in toxicity. In the 1945 paper we stated that our task was to find an improved form of gold to overcome the danger of toxic reactions. We have found this product.

With other forms of gold, toxic reactions were always expected but could never be anticipated. In many cases treatment had to be discontinued. In some, the attack of dermatitis became so acute that the life of the patient was threatened. In some countries patients are invariably requested to sign a paper absolving the doctor from all responsibility for anything which might happen following the administration of gold. This was a bad start for the patient, who was already upset physically, mentally, and economically. Another responsibility was added to his shoulders. Arthritic patients should be as free as possible from worry and responsibility. This form of therapy now that lauron is available is no more dangerous than many others that we use, and we do not see why it is necessary to bother the already worried patient with something that should be our own responsibility.

CONCLUSION

Lauron, myochrisine and solganol are equally useful therapeutically in rheumatoid arthritis. However lauron is less toxic than the other two. Change is sedimentation rate is not the only criterion of improvement as clinical improvement in itself is very important. The sedimentation rate may fluctuate with every little infection but steady clinical improvement is much more satisfactory.

NOTE.—Myochrisine and solganol are not toxic in every case but one cannot anticipate these reactions. In fact they may appear after the whole course has been given and the patient has returned to his home.

At the Banff Mineral Springs Hospital, 270 cases treated with lauron have not shown one serious reaction, though much larger doses were used than with other forms of gold.

* Supplied by Endo Products, Toronto.

VENEREAL DISEASE CAMPAIGN

The Present Status of Penicillin in Syphilis Treatment

In view of the current wave of enthusiasm regarding the use of penicillin in the treatment of syphilis, an Editorial appearing in the May 1946 issue of *The Journal of Venereal Disease Information* would appear to be most appropriately timed. To emphasize the present status of this therapy, excerpts from this Editorial are presented.

"It cannot be repeated too often nor too emphatically that penicillin therapy of syphilis is still an experimental procedure. This is true because of the prolonged course of the disease and its tendency to recur after periods of latency, and applies with equal force to any new treatment, drug or procedure. Organized, co-ordinated methods of study and observation enlisting the help of clinicians, laboratories, and institutions undoubtedly speed up evaluation, but there is still a minimum period of 5 years of continuous observation on several thousands of patients which is absolutely necessary before final conclusions can be drawn."

The Editorial continues by enlarging upon the incomplete state of our knowledge concerning penicillin therapy, discussing the recent discovery that some penicillin seems to have become less effective in the treatment of syphilis. Scattered reports to this effect by various clinicians and other agencies interested in the treatment aspects of syphilis control, confirmed in experimental animals by responsible investigators, during February 1946, led to the conclusion that the situation should be promptly appraised.

Accordingly, a meeting was called during March at which all interested agencies were present. From this meeting it developed that the "K" fraction of penicillin predominated in the less effective product whereas the "G" fraction had predominated in the earlier products which have given much better results. It was agreed by manufacturers that an effort would be made to produce penicillin in which the more effective "G" fraction predominates. In addition, greater attention will be given, in research, to determining the effectiveness of the various fractions of penicillin.

The early recognition by clinicians that penicillin therapy for gonorrhœa required continued observation to guard against the possibility that the subcurative penicillin dosage might have suppressed or aborted a concomitantly acquired syphilis infection leads to the possibility that something of the same situation applies to syphilis patients treated with penicillin in which the aberrant "K" fraction predominated—they may have received what was, in effect, a subcurative dosage.

This observation should remind physicians of the importance of explaining to every patient, regardless of the drug and treatment schedule used, the necessity for completing treatment and for periodic examinations. With any new type of therapy this becomes an obligation on the part of the physician to the patient, to the public and to the advancement of medical science.

It was noted that the likelihood of intensive follow-up on most of the patients treated for syphilis with penicillin is optimistic since many who are properly instructed on the importance of this phase of their treatment will report voluntarily and consistently for their diagnostic check-up.

Placing emphasis upon an important feature, the Editorial continues:

"We reiterate that much remains to be learned about penicillin, its composition and mode of action, and its ultimate place in the treatment of syphilis. Despite the most encouraging clinical evidence of its very real value in sterilizing early lesions, and its great apparent usefulness against syphilis in pregnancy, and central nervous system syphilis, it cannot yet be said that penicillin is more effective than arsenical-bismuth therapy from the standpoint of producing 'cures'. Several years of observation on several thousands of patients treated under the various schedules will be necessary before a dependable evaluation can be made."

In conclusion it is noted that the experience with penicillin species "K" emphasizes the inter-dependence of industry, laboratories, treatment sources, and public and private agencies in promoting the control of syphilis.

"Find V.D. Contacts — Report V.D. Cases"

MISCELLANY

Plague of Locusts in Italy

Called the worst locust plague in Sardinian history, a devouring army of these insects, reported to be four layers thick, two and one-half miles wide and 30 miles long, was marching in the direction of the Island's crop lands, leaving a barren waste behind it, according to a message from the UNRRA Rome office of May 7. "Unless this menace is checked by July," said the dispatch, "the plague of locusts may completely extinguish plant and vegetable life on the island, rendering existence there impossible for man and animals".

The two main hatching centres of these pests, areas of 25,000 and 70,000 acres respectively, have sent forth myriads of insects that were still young and wingless, in a migration unprecedented in the island's history and in columns greater than any such invasions verified in Africa.

Sardinian authorities, lacking transport to meet the oncoming scourge, have been assisted by the delivery of all of UNRRA's motor vehicles in the island, intended for the anti-malaria campaign beginning in September. As the intensity of the infestation was realized, the demand for poisoned bran, as bait, was raised from 4,800 tons to nearly 20,000 tons and emergency shipments of sodium arsenite were sought from England. At the same time, UNRRA trailers and 135 four-wheel-drive trucks, being overhauled on the mainland, were pushed through reconditioning by double work shifts. Twenty of these already were sent to the island. Among other emergency measures, the Government is experimenting in locust-extermination by the use of "cold smoke" fumes of hydrochloric and sulphuric acid sprayed by air pressure from drums carried by the trucks.

In the war against the record-breaking locust plague UNRRA has rushed quantities of the new pest-killer, gammexane, to the stricken island, together with additional transport vehicles to supplement those belonging to UNRRA and already in operation against the advancing hordes.

Five American transport planes on May 18 unloaded 10 tons of British-made gammexane in 60 drums to help combat the unprecedented plague in Sardinia. Simultaneously, ships at Oblia in the north and at Cagliari in the south, unloaded 30 more weapon-carriers, 10 jeeps and 30 trailers to speed the distribution of chemicals, personnel and equipment to the infestation points. Meanwhile, the struggle against the insects has been continuing, using such weapons as arsenite, flame-throwers, monochloride gas sprayed from UNRRA trucks, broom-beating and burning.

Gammexane, a relatively new compound, was flown over after a telegraphic search of Germany, Austria, Greece, Egypt, the Middle East and England revealed a lack of sodium arsenite available to mix with spoiled bran for poisoned bait. The compound has been used twice successfully in North Africa and is reported superior to arsenite in toxicity. It is harmless to animals and human beings.

By the end of May, after a seven week's battle, during which UNRRA experts employed every scientific means of locust extermination including techniques never used before, the invading hordes were halted and except for some unforeseen development, victory was in sight, saving both the island's and the Italian mainland's precious crops.

THE CANADIAN MEDICAL ASSOCIATION

Editorial Offices—3640 University Street, Montreal

(Information regarding contributions and advertising will be found on the fourth page following the reading material.)

EDITORIAL

THE BANFF MEETING

ANNUAL Meetings are always a culmination of a year's effort, and yet each one has its distinguishing features. The 77th Annual Meeting at Banff in June was unique in its atmosphere of relief from the tension of war, and also perhaps in its concern with post-war problems. There were no grounds for comparison with the previous meeting in Banff in 1889, except the unchanging magnificence of the setting; but there were then neither the problems nor the technical advances of a country in a most intense stage of scientific and industrial development.

One question which came sharply to the fore was that of finding sufficient space to house the Convention adequately. Our Association meetings have been steadily developing in attendance, but, under the special circumstances of this year, the meeting assumed unusual proportions. Unfortunately, the tide of war had not yet ebbed so far as to leave enough accommodation available in Vancouver, and whilst Banff was so attractive it was strictly limited as to space. At the same time, the invitation to be guests of the British Columbia Division was so insistent that the choice of a venue in the West was made in spite of the difficulties of space. The warmth and kindliness of our reception can only be fully appreciated by those who attended the meeting, or by those who have visited B.C. formerly. The Committee on Housing should receive a very special word of mention. They had a task of extraordinary difficulty, in which they were hampered by a combination of limited accommodation and excessive numbers of applications. Added to this was the time element, which was of vital importance in dealing with men across the width of the Dominion. To those who unfortunately could not be accommodated it would have been a convincing proof of the difficulties of the situation, as well as of the untiring and almost superhuman efforts of the Committee, to see the records that were kept and the strict impartiality with which requests were handled. The Association owes a special debt of gratitude to the members of the B.C. Division who devoted themselves so completely to this gigantic task.

Future meetings too will have difficulties of this kind, and our members should realize that with all the gratifying elements that there may be in large numbers, there will be allied difficulties in accommodation. We understand that other large national organizations suffer in similar degree.

The memory of our 77th meeting, however, is that of the warm kindliness of our Western hosts. The vigour of the meeting was expressed in the variety and timeliness of the program and the high quality of the contributions. The impressive ceremonial of the annual general meeting has never been more striking, nor more fully attended, and it was most fitting that, on such an occasion, the long and valuable services of our General Secretary should have been specially signalized.

EDITORIAL COMMENTS

Transmission of Poliomyelitis

The causative agent in poliomyelitis is known with reasonable certainty to be a virus, but the way in which it spreads, the route of its entry into the body, even the number of cases actually infected, are still problems not yet definitely solved. The scattered unpredictable incidence of the disease, the dramatic suddenness of its attack in some cases, the lack of effective specific methods of prevention and therapy, the lingering disability which may result, all tend to impress the profession with a sense of relative impotence and to strike the public with dismay. A brief consideration of a few factors having a possible bearing on the transmission of poliomyelitis is not untimely, for summer in any community may be shadowed by an outbreak.

The oddly irregular distribution of cases does not seem to fit into the established patterns for either contact infections or for those known to be milk- or water-borne. Evidence is accumulating that the gastro-intestinal tract rather than the nose is the usual, but probably not the only, route of entry. A question still awaiting a definite answer is: How does the virus spread?

A connection between poliomyelitis and flies or other insects has long been suspected because

the incidence is highest in summer and shows a rapid decline after the first frosts of autumn. The virus has been found in flies, in human fæces, and in sewage. Contact of flies with fæcal material is not infrequent, especially in rural areas lacking proper sanitary facilities.

A possible relationship between the fruit and vegetable harvest season and that of poliomyelitis has been suggested by Toomey and August[1] and recently stressed by Gebhardt and McKay.[2] The latter consider that the concept "virus-to-fly-to-food-to-patient seems to be in the realm of probability". Certain fruits and vegetables contaminated by virus-bearing flies and eaten raw, unpeeled and unwashed, might well prove to be important in transmission.

Precautionary measures which even if ineffective against poliomyelitis can be urged as desirable on other grounds are the screening of houses, privies and cesspools against insects, and the peeling or washing of all fruits and vegetables eaten raw. Heating kills the virus, hence cooked foods are safer, especially for children, when poliomyelitis is prevalent. R.C.S.

Dr. T. C. Routley, C.B.E.

It is with great pleasure that we record the honours which have been conferred recently on our General Secretary. This year's Dominion Day honours list (which covers the war years) announces that Dr. Routley has been granted the C.B.E., and we who fully realize the scope and quality of his work on the Procurement and Assignment Board add our warm congratulations to the many he will receive for this well merited distinction.

A somewhat more domestic but probably all the more pleasing recognition took place at the Banff Meeting, when as part of the ceremony of the Annual General Meeting the presentation of a silver tray was made to Dr. Routley, to commemorate the 25th anniversary of his secretaryship of the Association.

It is difficult, if not impossible to completely reflect by tangible honours the full value of good work, but these evidences are a pleasant indication of the high esteem in which our General Secretary is held.

Summer Hazards

Anyone who takes the trouble to look back over newspaper or journal files will find a great deal of repetition. In the field of health much of this repetition is annual, and appears as regularly as the sun, though not with quite as much effect. We have in mind particularly the warnings that are issued each year with regard to summer hazards. Sunburn has become one of these, especially amongst the younger generation. Those who live in the tropics seldom suffer from sunburn; they know that the sun is strong medicine; and it ought to be realized by now that, even in northern climates, excessive exposure to the sun is not worth the tan which is so eagerly sought.

Poison ivy is another recurrent summer theme. Of all the noxious plants it is probably one of the easiest to recognize, but its effects are still seen in every dermatological clinic or office. Unfortunately the effective cure for it has yet to be announced, and it is unlikely, from the natural history of its effect on the skin, that any 100% cure ever will be evolved. Prevention still holds first place in that respect, as in so many others.

Then we come to the dangers of milk and water supplies which are not safeguarded. In this respect the demand for pasteurization of milk should be constantly kept up, and this particular repetition will have a valuable summation effect in educating public opinion towards this major public health question.

1. TOOMEY, J. A. AND AUGUST, M. H.: Poliomyelitis comparison between the epidemic peak and the harvest peak, *Am. J. Dis. Child.*, **46**: 2, 1933.
2. GEBHARDT, L. P. AND MCKAY, W. M.: Epidemic poliomyelitis, *J. Pæd.*, **28**: 1, 1946.

MEN and BOOKS

J. S. HELMCKEN, M.R.C.P.(Lond.), L.S.A.

By J. H. MacDermot, M.D.

Vancouver

When next the British Columbia Medical Association meets in Victoria, B.C., it is to be hoped that the medical men of this Province will be moved to do especial honour to the memory of J. S. Helmcken one of its truly great members, and one of Canada's truly great men. For though an Englishman by birth, a Canadian only by adoption, Helmcken had in full measure the capacity that the best men of his native country have always shown, of becoming so completely identified with the country of their adoption, whatever it may be, that they give their complete allegiance as citizens to that country to the exclusion of every other, including their own native land. It is this quality that has made the British one of the best colonizers and settlers in history, that made the Englishmen of the North American Colonies in 1776 choose to live and die as Americans, in preference to, and in defiance of, their own native country of Britain; that has led to the formation of definite national types, Canadian, Australian, South African, which will owe nothing but their ancestry to Britain, and acknowledge a fealty only of sentiment and tradition. When it comes to the final decision, these men and women are Canadians, Australians, South Africans, not British, still less English or Scotch.

So Helmcken became an active, militant Canadian, though at first merely a British Columbian. Later, when this Province entered Confederation with the rest of Canada, though in the beginning he objected to the step, yet, when the majority of the Legislature decided on its adoption, true democrat that he was, he accepted the will of the majority, and gave his full allegiance to his new country. He also took a very active part in the actual process, as we shall see.

The Helmcken House, on Elliott Street, a few hundred yards from the Empress Hotel, a few hundred feet from the granite pile of the Legislative Buildings, is one of the treasures of British Columbia, and should be a Mecca for all right-minded medical men, when they go to Victoria. Merely as a curio, as a repository of tradition, as a landmark of British Columbia medical history, it is well worth the visit that is so easy to pay. It contains much that will interest one, and a wise Government has taken it over in perpetuity, and made it available to visitors. Here you will see the great wooden chest, filled with bottles and containers, in which he brought from England drugs and medical supplies. There are the instruments he used, simple and quaint to us now, but honoured by the use he made of them. There is the bed in which he always slept, made for him by native friends and admirers; the party dresses of his wife, daughter of the Governor, Sir James Douglas, with Indian blood in her veins.

John Sebastian Helmcken was born in London, England, on June 5, 1825, ten years after the battle of Waterloo, at which men of his ancestry, for he was of direct German descent, fought side by side with the men of the country where he was born. His father came from Bremerlee, and his mother from Miskirch, both in Germany.

His early education was obtained in London, but his family appear to have been people of moderate means and no very exalted social status, and there was no "old school tie" about his youthful neck; he was evidently destined at first to the then rather modest trade of druggist or "chemist" as he would be called in England. A certain Dr. Graves of Trinity Square took him into his office to learn the making up of the pills and potions that, in common with every doctor of the time and for many years after, he prescribed and dispensed from his own dispensary, for the modern prescription druggist was then unknown. An apothecary was a doctor, licensed to practise medicine, and the Society of Apothecaries conferred such a license; in fact, Helmcken himself held this license, the L.S.A. As far as can be ascertained, however, Helmcken had no intention of being a doctor. But his employer fell ill, and someone had to look after the patients; since in those days the medical art did not go far beyond the giving of drugs in various more or less unpalatable forms, some blood letting and the occasional use of bistoury or catheter, a well-trained chemist, familiar with stock prescriptions, could do very well in a pinch. Helmcken obtained wide experience in the slums of London, and decided to go the whole course, and become a doctor. He first became an apprentice as was then the custom, and studied at Guy's Hospital, that famous old home of medical training, which has suffered so severely in the recent war, being all but destroyed. He took his four years' course here, and passed the examinations of the Royal College of Physicians and Surgeons of England. About 1847 he obtained his L.R.C.P., and his L.S.A., obtaining his M.R.C.S. later.

Helmcken lived in two medical eras, the pre-anæsthetic, pre-antiseptic era, and the later, happier time when anæsthetics introduced into surgery relief from pain, and removed most of its terror, while antiseptics reduced almost to nothing the menace of postoperative infection, and so took away from surgery most of its horror; he saw, in his early days, operations without anæsthetics, and was present at the first administration of ether in Guy's Hospital; the anæsthetic was given by Dr. Gull. His knowledge of antiseptics and antiseptic surgery came later, when he was associated with Dr. Davie in Victoria; Davie went and saw Lister's work, and came back to Victoria an ardent convert to the new technique, which he introduced into his surgical practice.

Helmcken appears to have been a good scholar, and won several prizes. Shortly after graduation he was offered the position of medical officer to the *Prince Rupert*, one of the ships of the Hudson's Bay Company. The ship plied between England and York Factory, Hudson Bay, and Helmcken accepted the position. The ship traded in furs from the rich fur country which served the Hudson's Bay Company. This particular voyage had another purpose, to obtain, if possible, news of the whereabouts of Sir John Franklin the explorer, who had been lost shortly before, but no success in this part of the venture is recorded.

Helmcken served, too, on the *Malacca*, which travelled to Bombay, and was built by the same firm (Wigram & Green) which built the *Beaver*, which later went ashore on the rocks off Stanley Park in Vancouver.

His last voyage was on the *Norman Morrison*, to Victoria, then capital of the Colony of Vancouver Island, which was separate from the Department of the Columbia, or New Caledonia, as the mainland was then called.

It was quite a trip that Helmcken took in the *Norman Morrison* which carried much cargo and some two hundred emigrants going out to settle in this new land. The trip took five months from England to Victoria, via Cape Horn, which lived up to its bad reputation. Fearful storms raged for two weeks; hatches were battened down, and most of the passengers were beneath them. Smallpox broke out on board, although the ma-

jority of the passengers and crew had been vaccinated as far as this could be done. In those days, vaccine was preserved between plates, not in tubes like those we have today. It did not keep for long, and the ship's supply was limited.

The first case, a man named Burgess, died, and Helmcken describes the burial at sea in his records. Helmcken had the diary habit, and this fact was to stand British Columbia in good stead in later years, since his diary of the events in which he took part, and which led up to Confederatoin of British Columbia with the rest of Canada, was the sole record of these vital proceedings that could be trusted.

To return to the trip, the ship finally came sailing up the Straits of San Juan de Fuca, between Washington State and Vancouver Island, greeted by Indians—Siwashes as they are now called—who came out in their canoes to meet the ship. Helmcken found them dirty and unenterprising, and was not impressed favourably.

They landed in canoes, and found a fort, strongly fortified for those days, with a military establishment, and an Indian reserve, with some 500 to 600 Indians living on it. The population of Victoria otherwise consisted of some 200 white people. Helmcken associated with the officers in the Fort, they messed together, played together, and became fast friends. He records various anecdotes of some of these officers in his reminiscences.

Helmcken landed in Victoria in August, 1850. He was sent to Fort Rupert as medical officer, and was appointed to the office of magistrate. This was a wild and rough place—mining of coal seems to have been the chief activity—and while Helmcken was there, three of the whites were murdered by Indians. An expedition was sent out to apprehend the murderers and we read of Helmcken in a canoe, boldly entering a village where the murderers were, and where four hundred sullen tribesmen awaited his coming. Standing in his canoe he read a proclamation demanding the surrender of these men. Later this was effected, and the two men responsible were hanged, and their bodies buried alongside of their victims.

Thus early we see how readily Helmcken became a leader among his fellows. He must have stood out, of course, to some extent because of his superior education and mental equipment, but he had also initiative and courage; he was a dreamer of dreams, and saw possibilities for this new land. He was more than a dreamer, however, he was a man of action, and the combination made him a great asset to the country that became his home. He identified himself completely with the community, entered completely into its life, its amusements, its politics, its business. It was impossible for him to do things by halves, and he gave all his energy and powers to the service of his newly-adopted country. He left Port Rupert before long, to return to Victoria, to attend Governor Blanshard, who was ill. An adventure of his on the return trip from Port Rupert is worth recording. He made the voyage in a war canoe paddled by natives. At that time there were many hostile tribes in British Columbia, in fact only those Indians within a short distance of Victoria could be trusted to behave peaceably. He and his party landed at the Seymour Narrows for the night. They built fires and encamped. During the night ducks were heard quacking, but nobody paid any attention, and they resumed their journey in the morning, reaching Victoria safely.

Some months later an Indian chief visiting Victoria said, "Tell your White Chief never to sleep near a fire, but further away. The ducks they heard were our signals, and we would have killed our enemies, but the White Chief with them was carrying King George's papers".

(News travelled slowly indeed in those days. In 1850, Victoria had been on the throne 13 years, and yet the Chief still spoke of King George, if he is quoted correctly in the reference above.)

Helmcken rapidly became a busy doctor. When he reached Victoria Blanshard was Lieutenant-Governor, but his star was on the wane, and Sir James Douglas, who was associated with him, gradually displaced his colleague and became Governor. His name has been given to one of the main streets of Victoria, that of his predecessor being given to another street, of rather less importance.

Helmcken married Sir James Douglas' daughter, Cecelia, on December 27, 1852. Her mother was a full-blooded Indian, and in the pictures of Mrs. Helmcken one can see the features of her ancestry. She was a fine woman, and had the respect and admiration of all Victorians. She and her husband lived for a great many years in the house now known as Helmcken House, and they entered fully into the social life of the community. New Year's Eve was always a great occasion, and for more than half a century it was one of the gala nights of the year, when his legions of friends and acquaintances called at the home of the Helmckens' where open house was kept on Hogmanay, and the genial host met and talked to everyone.

Helmcken's descriptions in his reminiscences, of the social life and community conditions of Victoria, make interesting and even amusing reading. One must remember that at this time there were only some 200 to 400 whites, with no telephones, no railways, poor roads, only horses and buggies or waggons in which to travel. Helmcken himself had no horse or buggy when he first began practise, and had to go everywhere on foot. The Indians occupied settlements near the Fort, and were the sole source of supply for domestic service.

"Ordinarily", said Helmcken, "people visited each other. Domestic servants could not be had, so the ladies had to do the household work and did not loudly complain, although they had had plenty of domestics in England, but those who *had been* domestics, how they did complain of the hardships and the many servants they had had to wait on them at home! Oh my! The Indians did the rough work, cutting wood and so forth; they were not of much account. Indian women never became domesticated, but would hire themselves out for washing, scrubbing, etc. They were kind and trustworthy people, and everyone treated them well . . ."

Helmcken always liked the Indians, and constantly advocated their right to hold land and cultivate it, and to enjoy full citizenship. To us, nowadays, he seems to have idealized them somewhat. The modern Siwash Indian is not, one feels, adequately equipped for full citizenship; he is happier and better off living under the system of reserves, as he now does. Individual Indians have made good, and are allowed to do so, but the bulk of them are too close to the primitive to take kindly or safely to the sophistications of what we call "civilized life". Law and order were well maintained, on the whole. The Hudson's Bay Company was then the repository of law, and its magistrates administered this law, and did it well and with a fine impartiality. "Law was natural", says Helmcken "and law books and lawyers unknown." If an Indian was found to be in the wrong, he was punished mostly by fine. If the white man was in the wrong, he had to make reparation. The Indians respected this law, and felt that they were justly treated. "Mr. (later Sir James) Douglas", Helmcken tells us, "was wonderfully respected by the Indians". A few miles to the north of Victoria, the aborigines were still pretty wild, but they soon learnt that British law was ubiquitous and inexorable, and that misbehaviour inevitably brought its punishment in the form of a naval or military expedition, which meted out justice impartially but surely.

Entertainments were few and simple, and the settlers made their own. The first piano in the colony arrived in 1853, and was a tremendous event; its trip from England and its careful envelopment in all sorts of packing are carefully described in his Reminiscences by Helmcken. "In 1850", he says, "Mr. Tod's fiddle and flute were the only musical instruments. In 1852 Mr. B. W. Pearse bought a second (fiddle?) and the two had musical soirees in the mess room. Tod played vigorously, beating time on the floor with a shoeless but bestockinged foot. An immigrant made a tin whistle (out of a sheet of tin) on which he played very well. This was the Victoria band in 1853. Now, the dogs have disappeared and musical instruments are in every one's hands, sometimes almost worse than the dog bands."

As a doctor, Helmcken was, of course, a pioneer, and for long was the only doctor on the Island. He was coroner, health officer, and became known as "the leading physician from San Francisco to the North Pole, and from Asia to Red River". He had patients from north and south, many coming from Washington to see him. None were denied. He had to put up medicines for the Hudson's Bay patients, and lists them as "so many purges, so many dozen pukes, so many dozen of quinine and calomel. . . ."

Helmcken was the Bonnie Briar Bush type of practitioner—he never spared himself, and day and night was available to the sick. He often supplied food and clothing to the indigent among his patients, and they were not few. A story is told of a woman for whom he had done a service, the fee for which was $10, coming in to see him, and offering $1 on account, with apologies that she could do no more. Helmcken could see that she was poor, and asked her how much she had left. Finding that she only had one dollar left in her purse, and that she had no immediate prospects of any more, he declined to take the money. When the woman protested, he pointed out of the window by which they were sitting, to a fashionably dressed woman driving by in a dogcart driven by a coachman, while she had a baby in her arms. "Madam", said Helmcken, "do you see that lady? That's her second baby, and I've never been able to get even the first one paid for yet. You keep your money."

On another occasion, we are told, when he had attained to enough opulence to afford a horse and buggy, he was called out at night to a patient at Metchosin, many miles from Victoria. He went out to the barn to hitch up his horse, which, like its master, had already done a good day's work, lying asleep in the stall. Helmcken looked down at the tired beast, "No sense in us both losing our night's sleep," he remarked, and made the trip on foot.

"Many a night," writes his daughter, "I have seen him go off on foot in a storm, with his lantern, his gum boots, and greatcoat, to attend some poor ailing soul. (No electric lights, telephones or motor-cars in those days.) In later years came a horse and buggy. When people saw Julia with her feet in the ditch, cropping grass, they knew that 'the good doctor' as he was called, was nearby."

I have spoken of Helmcken as a "great doctor", and this may seem rather an exaggeration, as he has left no records or writings to prove his pre-eminence as a medical man; he is not great in the sense in which an Osler, or a Banting, or a Mayo Robson, is great. But there are two sides to medicine, which is at once a science, and an art; and the latter is perhaps the most important side. One is reminded of the remarks of two great men of old, the one Hippocrates, who says, "Where there is love

of the people, there is also love of the Art." (By which term he always designated Medicine.) Helmcken had the requisite love of the people in full measure—and so he loved his profession, and was a great artist in this sense. The other sage to whom I refer is Ecclesiasticus, the son of Sirach. In one of his essays he divides humanity into two main parts, and one remembers Kipling's poem about the Marthas and the Marys of mankind. One of the divisions is the man of ideas, of vision, the abstract thinker, the man of science in fact, the Mary type. The other is the man whose name will not be found in the councils of the nation, who will not burn the midnight oil, but who makes the wheels turn, and the engines go. "These men", he says, "maintain the fabric of the world, and in their handicraft is their prayer". This is the Martha type, the type to which Helmcken (as a doctor) belonged, and in its way it is as great, as it is as necessary to the progress to the world. Helmcken's greatness in the realm of medicine lay in his practice of the Art of medicine. The sick man needs first healing, and this, while it makes use of all that science can teach, transcends mere science, and is an outflow of personality, and not merely a pushbutton performance of an accredited ritual.

At this time, of course, there were no hospitals, though later an infirmary for sick women was started. The Royal Jubilee Hospital of today, a large well-equipped and modern hospital is the product, once removed (since the original Royal Jubilee was burnt down) of the union of this infirmary and another hospital which then existed; the two separately were having heavy going, and it was deemed better to amalgamate them. The first hospital facilities were procured by the Rev. E. Cridge, chaplain to the Hudson's Bay Company, who arrived in Victoria in 1854. He was later to become Dean and then Bishop of the Diocese, and was an able and energetic man, of whom Helmcken thought a great deal.

Gradually as Victoria grew, and became an established urban community, other doctors came in and started practice. Hospitals were built, settled medical conditions inaugurated. In the early days quackery abounded, and some of the advertisements appearing in the daily press were, to put it mildly, extraordinary. This led to the establishment of the British Columbia Medical Act, in which Helmcken took a part, and the laying down of definite standards of general and technical education, as requisites for entry into the practice of medicine. He became the first president of the British Columbia Medical Association on January 15, 1885, at the age of sixty. He practised for a good many years after that, but gradually surrendered his duties to his son, Dr. J. D. Helmcken. He died, full of years and after a happy and peaceful old age, on September 1, 1920, at the age of 95.

So much for Helmcken's medical career. But in the words of K. A. Waites, speaking over the CBC in March, 1938, "I bring you the portrait of a great British Columbian, J. S. Helmcken, M.R.C.S., L.S.A., of Victoria, B.C., a notable pioneer and statesman. He had two careers of notable service, one as a country doctor, one as a legislator . . ."

Helmcken did indeed take an outstanding part in the political life of his country, whose destiny he did much to shape. In 1856, he was elected, as member for Esquimalt, to the first Legislative Assembly of Vancouver Island, which first met on August 12, 1856. He became Speaker of the Assembly and held this office for some years. The business of the assembly at first was limited to water supply, mail delivery, liquor licenses, and the extension of the franchise. At this time, Vancouver Island was a separate colony, and the Mainland was the Department of the Columbia, or New Caledonia. It was decided between the two Legislative Assemblies to seek Union, and after British Columbia (the Mainland) was formally created, and so named by Queen Victoria in July, 1858, these plans came to fruition. In 1864, the first Legislative Council of British Columbia (without Vancouver Island) met in New Westminster; in 1865, the Vancouver Island House of Assembly moved a resolution favouring annexation to British Columbia, and a Union Act was passed in 1866. Victoria, however, retained the seat of government, and became the capital of the new Province of British Columbia, as it has been ever since. It was a wise move, putting the capital on Vancouver Island, rather than on the Mainland. There is a natural strain between the two areas, and the fact that Victoria is the capital does much to ease the strain, and overcome any tendencies to fission.

Then, with the growth of Canada came the problem of Confederation, and this was the subject of many debates, prior to 1870. At first Helmcken was opposed to Confederation; he felt that British Columbia was too isolated, and that the lack of communication made union impractical. This last objection was overcome by the C.P.R. project, and Helmcken's other objections were over-ridden by his fellows. He seems to have changed his views completely, and to have embraced the idea of Confederation very ardently; we find him being chosen by Governor Sir Anthony Musgrave to be one of a delegation sent to Ottawa in May, 1870, to obtain terms on which Confederation might be satisfactory to British Columbia. The Ottawa government was conciliatory, and anxious to satisfy the Western Colony of British Columbia. Helmcken was accompanied by the Hon. J. W. Trutch of the Cabinet, and the Hon. R. W. W. Carrall, member for Cariboo. One of his greatest contributions to this undertaking was the concise, day-to-day account he kept of all the negotiations. This most valuable document is in the Provincial

Library at Victoria, and is of extreme value to the Legislature, as showing in detail the whole of the negotiations. It sets forth the terms of construction of the Canadian Pacific Railway, the proposed amendments to the constitution of British Columbia and to the British North America Act, and other points which were to be very helpful later.

This was the high-water mark of Helmcken's political career. In 1871 he was offered a Senatorship. They evidently liked their Senators younger in those days, as he was only 46. He declined, however, as he stated that he wished to return to the practice of medicine in Victoria. He seems to have been quite devoid of personal ambition or any desire for honour or fame. As long as he could be of service in a practical way, he obeyed the call that came to him to serve. Then, like Cincinnatus of old, he returned to his plough. But he did outstanding service to British Columbia, and secondarily to Canada; he helped to build this great country. He was a great man, the *homo teres atque rotundus*, and that he was evidently a "practical" man, devoid of display or glamour, a doer and not a talker, does not in any way detract from his greatness. He was the man for the occasion, and he leapt to meet the occasion. And when he had done his part, he simply retired, with no fuss or feathers—went back to his own work, asking no thanks, and seeking no glorification. Like Sir Richard Grenville, he might cry "I have only done my duty, as a man is bound to do . . ."! but men of his type, of his vision, of his selflessness and devotion to duty, to the service of others, are rare; and so we may give thanks for John Sebastian Helmcken, and honour him in our hearts and in our memories, as one of the great Canadians.

His philosophy of life was simple and a straightforward one. It may be found in two quotations from Helmcken's Reminiscences:

"Every individual is but an atom; it is the congregation of atoms that make the lump of progress and solidity. Every man who has added, or adds, something to his country is a benefactor to the same."

Again: "The pioneer looks back to when he came, before railways, telegraphs, telephones. He sees the first telegram received, the first church built, the first land broken, the first roads and streets and bridges, the first hospitals—benevolent support for the poor, where once human beings had no existence; and the darker side too—prisons and *of course* (italics ours) saloons; then by degrees the hundreds of vessels of every size and power coming to Victoria from China, Japan, Australia, and indeed from all over the world, and the Union Jack, which once seemed solitary, so pleasantly abundant now.

"Dry docks and marine railways for damaged ships, the coast peopled to Alaska, the Indians (those that remain) civilized and earning a good living by work, the transition of the Legislative Assembly from a wooden, dirty room in a block building, to magnificent granite buildings, coal mines producing their thousands of tons, salmon exported by the million, millions of feet of lumber exported . . . in fact a civilized world when in 1850 desolation reigned. He (the pioneer) looks at these and says, 'In the building of a nation I have had a hand; however small the results thereof, I have not lived in vain'."

MEDICAL SOCIETIES

Fraser Valley Medical Association

The Fraser Valley Medical Association held its Annual Meeting at the Westminster Club, New Westminster on May 30. The meeting was very well attended with many former members now returned to practice, or discharged from the armed forces, present.

Officers installed for the coming year were: *President*—Dr. J. G. Robertson; *Vice-president*—Dr. E. K. Hough; *Secretary-Treasurer*—Dr. J. F. Sparling.

The name of the Association has now been changed to the Westminster Medical Association.

A feature of the evening was a presentation to Dr. O. Van Etter, who is retiring from practice.

La société médicale des hôpitaux universitaires de Québec

La société médicale des hôpitaux universitaires de Québec le 1er mars 1946.

LOMBALGIE AVEC OU SANS SCIATIQUE.—J. Louis Larochelle.

Le causes de la lombalgie avec ou sans sciatique sont multiples; c'est pourquoi, le diagnostic est très difficile mais un examen complet et soigné nous permet de le faire. Après avoir énuméré les principales causes, on traite tout spécialement de l'arthrite des facettes articulaires lombaires et lombo-sacrées comme étiologie de la lombalgie. On explique sa pathogénie et on conclut que l'on doit y penser aussi souvent que l'on pense à la hernie du disque intervertébral. Un observation d'un patient prouve d'ailleurs cette assertion. On parle de son traitement et l'on conclut qu'il doit être d'abord médical et conservateur et l'on interviendra chirurgicalement qu'en cas d'échec complet du traitement conservateur.

A PROPOS DU CORTUNON.—J.-B. Jobin.

Le "cortunon" est un extrait déprotéinise de foie. Il contient un principe actif inconnu qui agit comme une hormone cardiaque. Cliniquement, il tonifie le myocarde, dilate les coronaires et ménage les réserves du cœur en oxygène. Voilà la théorie, voici les constatations cliniques: 49 malades traités par le cortunon depuis trois ans. Ils souffraient soit d'hypertension artérielle isolée, soit hypertension et d'hyposystolie, soit d'hypertension et d'angor, soit d'angor sans hypertension, soit de ramollissement cérébral, soit d'infarctus du myocarde, soit enfin d'asystolie irréductible. 40% de bons résultats.

Le cortunon, pris par la bouche, n'a pais fait baisser la pression artérielle mais, par voie intra-veineuse, il l'abaisse considérablement. Les accidents sont râres. Le tracé électrocardiographique n'est pas modifié par ce traitement.

LA CHIRURGIE DANS L'ULCÈRE GASTRO-DUODÉNAL. — François Roy et Jacques Turcot.

De 1933 à 1944 inclusivement, 226 malades ont été opérés à l'Hôtel-Dieu de Québec pour ulcères gastriques ou duodénaux. C'est entre l'âge de 30 à 50 où les complications sont les plus fréquentes. La simple fermeture d'un ulcère perforé ne semble pas modifier le syndrome ulcéreux. La gastro-entérostomie chez les malades âgés de plus de 50 ans a donné des résultats satisfaisants. Chez ceux moins âgés, ils ont été plûtôt mauvais. Les résultats de la gastrectomie ont été très satisfaisants dans environ 75% des cas. Il ne semble plus faire de doute aujourd'hui que c'est le traitement de choix de l'ulcère gastro-duodénal dans la grande majorité des cas.

A PROPOS DE CANCER DU SEIN.—Euchariste Samson et Jules Lavoie.

Les auteurs rapportent 61 cas de cancer du sein opérés entre 1936 et 1940; 16 sont encore vivants après 5 ans, soit 26.2%. Le pourcentage de survie après 5 ans n'est que de 10.3% lorsqu'il y a des métastases axillaires et de 40.6% quand il n'y en a pas. Le facteur le plus important dans le pronostic est donc la présence ou l'absence d'adénopathie axillaire au moment de l'intervention. La survie moyenne suivant l'âge chez les malades décédés semble indiquer que le cancer du sein est d'autant plus malin que la femme atteinte est plus près de sa ménopause, car l'évolution est surtout rapide entre 40 et 50 ans. Les résultats comparés de la chirurgie seule et de la chirurgie associée à la radiothérapie sont sensiblement les mêmes.

LE CARBACHOL DANS LES MEGA-DOLICHO-COLONS.—Jean-Thomas Michaud.

La théorie pathogénique la plus communément admise est que cette affection résulte d'un désiquilibre du système autonome, soit par hypertonicité du sympathique, soit par insuffisance du para-sympathique.

Pour lutter contre la dilatation colique avec tous ses troubles secondaires, on peut agir chirurgicalement sur la sympathique, ou médicalement sur le parasympathique. Parmi les médicaments, l'acétylcholine et l'acétylbêtaméthylcholine ont le désavantage d'être facilement attaquées par l'enzyme, alors que le carbaminoylcholine (chlorure de carbamylcholine avec divers noms commerciaux dont le carbachol) lui résiste totalement. Ce médicament a en plus surtout une action élective sur l'intestin tout en causant moins d'effets désagréables.

Après plusieurs cas cités dans la littérature, nous avons traité trois cas de dolichosigmoide, avec un résultat excellent. La dose initiale fut de 1 comprimé pour trois jours (2 milligrammes), avec augmentation d'un demi-comprimé à tous les trois jours, jusqu'à dose efficace, mais avec un maximum de trois comprimés par jour.

Le traitement médicamenteux présente sur la chirurgie es avantages qu'il peut se donner chez de tout jeunes enfants, peut agir même alors que le résultat chirurgical est aléatoire (maladie trop avancée), et ne requiert pas une épreuve diagnostique positive préalable.

CANADIAN MEDICAL WAR SERVICES

MEDICAL OFFICERS APPOINTED TO THE R.C.A.M.C. — ACTIVE FORCE

MAY 1946

(Previous sections in January, March, April, May, June, July, September, October, November and December, 1945 and January, March, May, June, July, 1946.)

SECTION LXXV

Name	*Address*	*Date of appointment*
Sherdan, A. J.,	Hafford, Sask.	1-2-46

MEDICAL OFFICERS STRUCK OFF STRENGTH OF THE R.C.A.M.C.—ACTIVE FORCE

MAY 1946

SECTION LXXVI

Name	*Address*	*Date struck off strength*
Abell, M. R.,	Aylmer, Ont.	1-5-46
Acton, W. G.,	9815-110 St., Edmonton	12-4-46
Alter, C.,	78 Albany Ave., Toronto	8-4-46
Amacher, H. C.,	New Hamburg, Ont.	7-5-46
Amundsen, L. R.,	Claresholm, Alta.	23-4-46
Anderson, R. C.,	Address not known	18-3-46
Andrews, J. L.,	70 Lincoln Ave., Brantford, Ont.	4-5-46
Appleford, R. D.,	9 St. Paul St., Burlington, Ont.	25-4-46
Archibald, B. C.,	5 Prince St., Glace Bay, N.S.	3-4-46
Armstrong, H. B.,	10916-85th Ave., Edmonton	31-3-46
Auceland, N. L. D.,	General Hospital, Vancouver	29-3-46
Ayre, W. B.,	250 Laird Blvd., Apt. 9, Town of Mount Royal, P.Q.	17-4-46
Ballen, C. M.,	186 George St., New Glasgow, N.S.	11-4-46
Barnett, G. D.,	Suite 20, Crescent Annex, Regina	8-3-46
Barniecki, P. J.,	Cudworth, Sask.	23-4-46
Barootes, E. W.,	98 Fairlawn Ave., Toronto	30-4-46
Barras, L.,	42 Begin Ave., Levis, P.Q.	12-4-46
Bean, H. A.,	2136 Argyle St., Regina	23-4-46
Belcourt, R. J. P.,	130 Turnbull Ave., Quebec	4-2-46
Bell, R. E.,	Edmonton	16-4-46
Bell, R. G.,	534 Millwood Rd., Toronto	26-4-46
Bell, W. W.,	2142 Pentland Road, Victoria	1-4-46
Benoit, C. F.,	147 Masson St., St. Boniface, Man.	13-4-46
Blackwell, C. L.,	Bradford, Ont.	11-5-46
Bland, S. S.,	47½ Chestnut St., Halifax	30-3-46
Bodkin, C. E.,	Box 55, Aylmer, Ont.	25-4-46
Bratek Kozlowski, F.,	3535 Shuter St., Montreal	23-4-46
Brereton, D. C.,	130 Ruby St., Winnipeg	1-5-46
Brown, A. T.,	St. Mary's Hospital, Montreal	3-5-46
Brown, L. B.,	11045-123 St., Edmonton	3-5-46

Name	*Address*	*Date struck off strength*
Brown, W. H.	2 Clarendon Ave., Toronto	6-4-46
Brunet, J. L.	7605 Bellerive St., Montreal	15-4-46
Bundock, J. B.	122 Rue de L'Eglise, Quebec	17-4-46
Burroughs, R. B.	Box 27, Swift Current, Sask.	9-4-46
Carriere, O.	St-Redempteur, Levis Co., P.Q.	26-4-46
Chaisson, A. F.	134 Sydney St., Saint John, N.B.	23-4-46
Chalke, F. C. R.	326 Dumoulin St., St. Boniface, Man.	12-4-46
Chipperfield, D. V.	Hubbard, Sask.	27-4-46
Clark, D. R.	Toronto	10-4-46
Coburn, F. E.	60 Indian Road Crescent, Toronto	4-4-46
Cole, A. B.	408 Clinton St., Toronto	20-3-46
Cooper, S. R.	490 Prince Arthur St., West, Montreal	5-4-46
Copp, W. F.	198 High St., London, Ont.	6-5-46
Cornish, A. L.	1970 Argyle St., Victoria	12-4-46
Costigan, P. G.	Stettler, Alta.	15-4-46
Cote, R.	1300 Sherbrooke East, Montreal	3-5-46
Cottrell, J. D.	207-4th St. West, Calgary	25-4-46
Coulter, P. T.	34 McNaughton Ave., Chatham, Ont.	15-4-46
Couves, C. M.	Lang, Sask.	30-4-46
Crawford, J. S.	151 Marion St., Toronto	12-4-46
Dagenais, M. A. J.	7849 Berri St., Montreal	9-5-46
Darke, T. V.	2071 Bae St., Regina	9-5-46
Delage, M.	114 Dolbeau St., Quebec	2-4-46
Dessureault, M.	St. Adolphe (Champlain), P.Q.	10-5-46
Des Trois Maisons, R.	Montreal	6-5-46
Dewar, L. G.	New Perth, P.E.I.	2-4-46
Dobson, M. W.	Ninga, Man.	2-4-46
Dodds, W. A.	42 Buckingham Ave., Toronto	23-4-46
Doerr, R. S.	Toronto General Hospital, Toronto	3-5-46
Dolgoy, M.	10139-116th St., Edmonton	3-5-46
Downing, J. B.	Summerside, P.E.I.	27-4-46
Dubo, S.	83 Gloucester St., Apt. 5, Toronto	1-5-46
Durand, L.	965 Visitation St., Montreal	10-5-46
Dussault, F.	3591 St. Urbain, Apt. 2, Montreal	23-4-46
Dwyer, C. H.	232 Isabelle Place, Riverside, Ont.	10-4-46
Edwards, F. J.	Verdun Protestant Hospital, Verdun, P.Q.	29-1-46
Edmunds, L. M.	Lacombe, Alta.	16-4-46
Farber, E.	42 Barton St., Apt. 21, Toronto	10-5-46
Farmer, G. R. D.	120 Herkimer St., Hamilton	28-3-46
Faulds, C. E.	Sheddon, Ont.	9-4-46
Feindel, J. R.	Bridgewater, Lunenburg Co., N.S.	16-2-46
Feldman, E. D. A.	308 Lauder Ave., Toronto	24-3-46
Feldsted, E. T.	525 Dominion St., Winnipeg	3-5-46
Fenwick, J. B.	Suite 5, 54 Donald St., Winnipeg	9-4-46
Ferrier, C. C.	Ontario Hospital, Brockville, Ont.	9-5-46
Ferron, C.	Grand Mere, P.Q.	24-4-46
Fisher, G. S.	787 Richmond St., London, Ont.	16-4-46
Fisher, R. E.	Calgary	8-4-46
Fisher, W. F.	93 Wexford Ave. S., Hamilton, Ont.	18-4-46
Fjordbotten, A. L.	Granum, Alta.	3-4-46
Fletcher, H. B.	165 Queen St., Sherbrooke, P.Q.	24-4-46
Fletcher, J. P.	19 Tranby Ave., Toronto	1-5-46
Forrest, S. J.	166 Oakwood Ave., Toronto	7-5-46
Francis, G. H.	3837 West 11th Ave., Vancouver	24-4-46
Frebrowski, P. W.	R.R. 2, Ryley, Alta.	9-5-46
Friesen, L. V. C.	401 Ave. E., South Saskatoon	24-4-46
Fulton, J. B.	7825-112th Ave., Edmonton	29-4-46
Fulton, J. R. W.	44 Evelyn Ave., Toronto	11-5-46
Garner, F. O. R.	1676 West 57th Ave., Vancouver	2-4-46
Gates, B. A.	Reston, Man.	25-4-46
Gibson, F.	3837 Girouard Ave., Montreal	17-4-46
Gilbert, C. A.	131 Grande Allee, Quebec	15-4-46
Gilham, R. E.	Calgary	25-4-46
Goldberg, H. I.	29 Rosebank Ave., Halifax	2-5-46
Goldenberg, L.	53 Burnside Drive, Toronto	20-4-46
Gooderham, M. E. W.	120 Duke St., Hamilton, Ont.	27-4-46
Goodman, W. S.	Baldur, Manitoba	7-5-46
Gosselin, F. d'A.	30 Commercial St., Levis, P.Q.	30-4-46
Groleau, Y.	St. Zacharie, Beauce Co., P.Q.	16-4-46
Guay, J.	1849 Sherbrooke St. E., Montreal	2-5-46
Haliman, G. O.	2419 Point Gray Road, Vancouver	3-4-46
Hamel, P. E. N.	107A St. Patrice, Magog-East, Quebec	1-5-46
Hare, A. F.	42 Warren St., Oshawa, Ont.	23-4-46
Harris, H. E.	4667 Hutchison St., Montreal	23-4-46
Harvey, J. E.	92 Walmer Road, Toronto	30-3-46
Hauch, C. Y.	996-5th Ave., Owen Sound, Ont.	12-4-46
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Hebert, J. H. L.	153 Masson St., St. Boniface, Man.	1-4-46
Heller, B. P.	32 Joyce Ave., Outremont, Montreal	15-4-46
Hemstock, J. W.	Fairview, Alta.	16-4-46
Henderson, C. U.	Waterford Bridge Rd., St. John's, Nfld.	17-4-46
Henderson, E. R.	51-17th Ave., Lachine, P.Q.	1-5-46
Henry, G. A.	40 Strath Ave., Toronto	18-4-46
Hillary, H. L.	Aurora, Ont.	9-4-46
Howes, J. W.	90 Langarth St., London, Ont.	29-4-46
Hunter, J. C.	Teulon, Manitoba	4-4-46
Hutchinson, J. H. W.	Port Arthur, Ont.	7-5-46
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Johnson, L. E.	Wetaskiwin, Alberta	26-4-46
Johnston, E. B.	Newburg, Carleton Co., N.B.	1-5-46
Johnstone, G. C.	Fenelon Falls, Ont.	10-4-46
Joseph, M. L.	44 Lauder Ave., Toronto	28-3-46
Kalichman, N.	6035 Wilderton Ave., Outremont, P.Q.	10-5-46
Kee, C. G.	Fair Vale Station, N.B.	30-4-46
Kelly, D. B.	211 College St., Toronto	24-4-46
Kelly, J. K.	Zeballos, B.C.	25-4-46
Kennedy, M. J.	204 Larch St., Apt. 1, Sudbury, Ont.	30-4-46
Kirkpatrick, G. J. A.	Balmoral Park, Comox, B.C.	11-4-46
Knox, A. W.	303 Pandozi St., Kelowna, B.C.	28-3-46
Kurtze, W. L.	2839 Victoria Ave., Regina	3-5-46
Kyle, J. L.	77 Dobie Ave., Town of Mount Royal, Montreal	8-5-46
Kyles, N. B.	Orangeville, Ont.	17-4-46
Lager, L. E.	11 Bond South, Hamilton, Ont.	11-5-46
Lang, A. C.	165 Osborne Road, North Vancouver	26-4-46
Langis, G.	C.P. 446, Rimouski, P.Q.	20-4-46
Laplante, M. A.	7262 Christopher Columbus, Montreal	3-5-46
Laporte, J. M.	4147 Papineau Ave., Montreal	8-4-46
Laramee, J. A. F.	367 Rue de l'Epee, Outremont, P.Q.	22-4-46
Lariviere, J. L. P.	Montreal	9-4-46
Lasalle, C. B.	184 College St., Toronto	22-4-46
La Salle, G.	Ansonville, Ont.	1-4-46
Lavallee, E.	60 Moncton Ave., Quebec	9-4-46
Lavers, G. D.	Nanao, Alta.	9-4-46
Lawson, F. S.	Ontario Hospital, Woodstock, Ont.	10-5-46
Layiner, B. D.	194 Crawford St., Toronto	30-3-46
Leadman, T. P.	57 Fentiman Ave., Ottawa	15-4-46
Lerman, Samuel Isadore	4614 Clark St., Montreal	15-4-46
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Maclean, J. A.	188 Carling Ave., Ottawa	27-3-46
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McLeod, T. R.	Muncey, Ont.	3-5-46
MacMillan, F. A.	302 Euston St., Charlottetown	27-4-46
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Magee, R. K.	Peterboro, Ont.	30-3-46
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Malo, R. F.	Field, Ont.	27-4-46
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Masson, J. W.	c/o F. L. Middleton, Calgary Drafting & Printing Coy., Calgary	13-4-46
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Maxfield, F. B.	Foam Lake, Sask.	23-4-46
Maxwell, I. D.	No known address	2-4-46
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Ormrod, J. K. T.	1109 St. Paul St., Three Rivers, Que.	23-4-46
Ostrovsky, S.	397 Edward Charles St., Montreal	12-4-46
Ostry, H.	Kamloops, B.C.	23-3-46
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Ouimet, J. G. R.	6684 St. Denis St., Montreal	22-4-46
Parks, J.	3465 Irving St., New Westminster, B.C.	25-4-46
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Pearsall, H. E.	400 Leslie St., Toronto	7-5-46
Peterson, E. W.	122 Kenaston Ave., Town of Mount Royal, Que.	9-5-46
Phillips, P.	Princeton, B.C.	6-4-46
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Pilon, L. J.	3731 St. Famille St., Montreal	23-4-46
Pinkerton, E. K.	Vancouver	26-4-46
Poole, J. C.	Revelstoke, B.C.	24-4-46
Powell, C. E.	23 Winnipeg Ave., Port Arthur, Ont.	9-3-46
Pratten, J. S.	608 Gilmour St., Peterborough, Ont.	6-5-46
Priddle, W. W.	46 Dunloe Rd., Toronto	9-4-46
Proctor, H. A.	58 Harmer Ave., Ottawa	2-4-46
Prowse, W. A.	1070 Shaw St., Toronto	10-4-46
Purdie, F. J. E.	Griswold, Man.	12-4-46
Purkis, R. S. A.	406-21st Ave. N.W., Calgary	24-4-46
Rae, M. V.	Calgary	20-4-46
Ramey, F. F.	341 George St., Fredericton,	30-4-46
Raxlen, S.	1 Wells Hill Ave., Toronto	16-4-46
Raymond, W.	Charlesbourg East, Quebec Co.	12-4-46
Reinke, E. E.	103 Renfrew St., Pembroke, Ont.	27-3-46
Ritchie, W. G. D.	Dauphin, Man.	29-4-46
Rockman, J. B.	Toronto	2-5-46
Romeyn, J. A.	10933-79th Ave., Edmonton	17-4-46
Rosenberg, B. L.	5635 Canterbury Ave., Montreal	22-4-46
Rosenhek, C.	Campbellton, N.B.	22-4-46
Routley, E. F.	17 Heathdale Rd., Toronto	10-4-46
Rowan, A. A.	117 York St., Fredericton	26-3-46
Rublee, J. E.	Wilkie, Sask.	24-4-46
Ruddick, D. W.	Morin Heights, Que.	1-4-46
Sager, H. S.	22 Dunsmure Rd., Hamilton, Ont.	23-4-46
Samis, J. C.	6 Oriole Crescent, Toronto	19-3-46
Saulnier, G.	68 Jacques Cartier St., Chicoutimi, Que.	30-4-46
Savage, D. C.	2 Kathleen St., Guelph, Ont.	13-4-46
Scratch, N. W.	Maymont, Sask.	17-4-46
Seddon, T. T.	623 Bedford Rd., Saskatoon	18-4-46
Semenchuk, P. W.	Fernie, B.C.	10-4-46
Shapiro, E. I.	29A Vine St., St. Catharines, Ont.	8-4-46
Sharpe, V. J. H.	1414 Victoria St., Brandon	15-4-46
Shragge, P.	10621-80th Ave., Edmonton	10-4-46
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Smith, I. T.	90 Main St., Hawkesbury, Ont.	6-4-46
Snelling, W. W.	196 E. Main St., Welland, Ont.	9-5-46
Solway, S. H.	47 Olive Ave., Toronto	9-5-46
Spooner, C. M.	1 Clarendon Ave., Toronto	12-12-45
Starr, P. H.	468 Dundas St. W., Toronto	9-5-46
Steele, H. D.	171 Elgin St., Arnprior, Ont.	3-4-46
Stenstrom, J. D.	1134 Dallas Rd., Victoria	24-4-46
Stephenson, G. H.	455-18 Ave. W., Vancouver	30-4-46
Stewart, D. A.	Sintaluta, Sask.	2-4-46
Stewart, N. S.	1211 Miflin St., Huntingdon, Penn., U.S.A.	20-4-46
Stewart, W. D.	8003-112th St., Edmonton	9-5-46
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Tardif, A.	94 Ave des Erables, Quebec	24-4-46
Taylor, W. B.	Wyngard, Sask.	1-5-46
Thomas, C. M.	Rivers, Man.	30-4-46
Tindall, J. B.	92 Willow St., Waterloo, Ont.	15-4-46
Tredger, C. N.	11127-88th Ave., Edmonton	25-4-46
Van Horne, J. R.	Yarmouth, N.S.	25-4-46
Venini, P. G.	Vancouver	17-4-46
Verville, N. N.	Sioux Lookout, Ont.	2-5-46
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Villeneuve, J. M.	St. Croix Co., Lac St. Jean, Que.	26-4-46
Wallace, A. W.	1853 Nelson St., Vancouver	10-4-46
Wallace, C. A.	889 Adelaide St., London, Ont.	16-4-46
Walsh, F. M.	Suits 15, Bruce Apts., Regina	18-4-46
Ward, J. G.	106 Ethelbert St., Winnipeg	29-3-46
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Willox, C. L.,	410 Scarboro Ave., Calgary	30-4-46
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Wilson, H. D.,	Princeton, Ont.	9-4-46
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CORRESPONDENCE

Vitamin D Concentrate in the Treatment of Rheumatoid Arthritis

To the Editor:

The Readers Digest may bring predigested news to the public, but sometimes the medical content is unreliable and premature.[1]

In the case of massive dosage of vitamin D concentrate for the treatment of rheumatoid arthritis, no serious worker would consider the case as proved and most reliable, scientific, objective studies imply that this form of therapy is valueless. Unfortunately, undue commercial advertising ballyhoo has had the usual effect on an uninformed public and some perplexed over-worked practitioners of medicine. It is not denied in these days of psychosomatic fervor, that improvement has, in a few cases of rheumatoid arthritis, followed the administration of massive doses of vitamin D concentrate, but then, in a disease as variable as rheumatoid arthritis, over the centuries cures have been claimed for many agencies, such as bee and cobra venom, chaulmoogra oil, lemon and strawberry juices, etc., *ad nauseam*: probably all *post hoc sed non propter hoc*.. But when a potentially dangerous substance is sold at a high price to a gullible and unprotected public the ire of decent doctors is apt to rise above normal, particularly when in some cases, besides causing the victim's anæmia of the pocket, it may have definite pathological effects on the hæmatopoietic system.

Some two years ago, we studied a small series of cases in the Arthritis Clinic of the Royal Victoria Hospital using ertron, osteoforte and calciferol. In all cases regular physical examinations were carried out and the blood studied for calcium, phosphorus, non-protein nitrogen and sedimentation rate of the red blood corpuscles. One case only made definite improvement with no untoward effects and reduction of the sedimentation rate. The majority showed some subjective improvement with the inauguration of treatment, to be followed later by headache, nausea, restlessness and occasionally vomiting and polyuria, slight elevation of blood pressure, calcium, non-protein nitrogen, albumin and casts in the urine and *slight increase in the sedimentation rate*. No discernible difference could be made out in the results from the three preparations employed.

Authenticated work in reputable and well-established clinics, by such well-known rheumatologists as Bauer,[2] Freyberg,[3] Slocumb,[4] Boots,[5] and others makes detailed results of our studies unnecessary, but the continued irresponsible claims made in some quarters demands keeping the factual evidence before the general practitioners, who are, after all, the guardians of the people by whom they are consulted.

HENRY P. WRIGHT

Montreal.

1. DE KRUIF, P.: *The Readers Digest*, November, 1943.
2. ABRAMS, W. R. AND BAUER, W.: *J. Am. M. Ass.*, 111: 1555, 1938.
3. FREYBERG, R. H.: *J. Am. M. Ass.*, 119: 1165, 1942.
4. SLOCUMB, C. H.: *Am. Int. Med.*, 16: 241, 1942.
5. BOOTS, R. H.: *J. Am. M. Ass.*, 123: 857, 1943.

Division of Medical Research of the National Research Council

To the Editor:

Several years prior to the outbreak of war, representatives of the Canadian Medical Association and the Royal College of Physicians and Surgeons jointly requested the National Research Council to establish an Associate Committee on Medical Research for the purpose of stimulating and correlating medical research in Canada.

Following careful consideration, action was taken accordingly and this committee was in active operation when the war began. The National Research Council did not establish extensive medical laboratories under its own auspices, but adopted the policy of supporting research work recommended by the Associate Committee on Medical Research through grants awarded to qualified research workers in the various medical schools and hospitals throughout Canada.

Following the outbreak of war, there was a large influx of medical problems from the three armed services. In order to meet this situation, the National Research Council established a separate Medical Research Committee for each Service to deal with the medical problems peculiar to the individual service, and also made necessary arrangements to ensure that there would be no unnecessary duplication of effort between these committees, and that each Service concerned would receive full benefit from work done by another committee on problems of common concern.

Following the close of the war, the National Research Council decided to discontinue the three Service Medical Committees, and the question of the organization of the activities in this field on an effective postwar basis was considered by the main Associate Committee on Medical Research, which recommended that in order to meet the existing need for expansion of work in this field, it should be organized as a Division of Medical Research of the National Research Council. Action has been taken accordingly by the National Research Council, and Dr. J. B. Collip, who was Chairman of the former Associate Committee, has been appointed Director of the Division of Medical Research, and Dr. G. H. Ettinger, who was Honorary Secretary of the former committee, has been appointed Assistant Director of the Division.

In addition, a new Advisory Committee on Medical Research has been established for the purpose of advising the Division of Medical Research on questions of policy and with respect to medical problems which should be investigated. Under the new organization of this work, the National Research Council will continue to support medical research mainly in the existing medical schools and hospitals throughout Canada, rather than through the establishment of medical research laboratories and appointment of medical research workers under its own auspices.

S. P. EAGLESON,
Secretary-Treasurer.

Ottawa, June 4, 1946.

SPECIAL CORRESPONDENCE

The London Letter

(From our own correspondent)

THE PROBLEM OF THE DEMOBILIZED DOCTOR

While the Health Bill wends its tortuous way through Parliament, a situation is arising which threatens a breakdown in the supply of general practitioners. The increasing rate of demobilization of doctors has resulted in an influx into civilian life of doctors who are unable to find suitable employment, so that the country is faced with the apparent paradox of a shortage of consultants and general practitioners existing alongside a large number of doctors seeking employment. This anomalous state of affairs is largely due to the uncertainty concerning the immediate future of medical practice in this country. Many practitioners, who would normally be retiring or seeking partners or assistants, have decided to hold their hand until the shape of things to come in the form of a national medical service is less hazy. Similarly, many hospitals are marking time until they have more precise information as to their future. Add to this the very natural reluctance of young consultants to accept honorary hospital appointments when the prospects of private consulting practice are so problematical and the apparent paradox is easily explained.

So far the Government has done little to ameliorate matters, except by providing courses of instruction for doctors returning from the Forces. These are excellent in many ways, but, even though fairly generously subsidized, a demobilized doctor with family responsibilities cannot be expected to live indefinitely upon such allowances. In addition many of the hospitals are becoming overcrowded with ex-servicemen, with an unavoidable lowering in the standard of teaching.

According to the Minister of Health, the new National Health Service will not come into operation until April 1948. It is becoming increasingly clear that during the interregnum some special arrangements will be necessary to cope with the difficult situation, and the suggestion has been made that during this interim period the Ministry of Health should engage doctors at a salary commensurate with their family responsibilities. The Minister has undertaken to consider what form of help his Department can provide, and the B.M.A. has set up a special committee to investigate the problem.

REHABILITATION

In December 1944 the Council of the B.M.A. appointed a special committee to consider the subject of rehabilitation. The report of this committee has just been published and re-focuses attention on the lack of co-ordination that exists among the various schemes that have come into force during the last few years. No fewer than six Ministries are involved, and it is clear, as the committee stresses, that one of the first essentials is that the medical services of industry should be part of a comprehensive health service, administered by a single Government Department. In addition a re-orientation of our views on rehabilitation is necessary. Popular opinion, even in the profession, still associates rehabilitation with the physiotherapeutic treatment of orthopædic conditions, in spite of the fact that 25% of disabled persons are neurotic and 50% are medical patients. Vocational training should be the aim of all schemes of rehabilitation, and if such schemes are to succeed, the hospital must be "not a backwater but an ante-room to normal life". To ensure this there must be adequate co-ordination between the physician or surgeon in charge of the patient, the rehabilitation officer, the general practitioner and industry.

A further point that is brought out in the report is that rehabilitation for outpatients is an undeveloped field in this country. An interesting development in this field is the scheme being set up by the British Council for Rehabilitation. This is devised "to help in preparing long-stay patients in hospital or sanatorium whether permanently disabled or not, for the life awaiting them on discharge".

Once again it would appear that, as so often happened before over here, voluntary action is to blaze the trail of progress, leaving it to the slow-moving mechanism of Governmental Departments to follow on and consolidate the advances made by private enterprise.

THE COMMON COLD

Much interest is being evinced in the common-cold research unit which the Medical Research Council and the Ministry of health have established at the Harvard Hospital, near Salisbury, built and equipped in 1941, and presented to the Ministry by Harvard University and the American Red Cross for research into communicable diseases. Volunteers, mostly university students, will spend a period of a fortnight in the hospital and submit themselves to various experimental procedures including spraying of the nose with material to test for the presence of viruses. So many investigations into this problem have been carried out of recent years without producing any concrete results that it is to be hoped that this new approach to the problem may solve one of the most perplexing problems of modern medicine. Among other factors to be investigated is the effect of environmental conditions. The use of volunteers for an investigation such as this is one of the developments of wartime research that may well allow of a more direct approach to many similar problems.

BRIGHTER HOSPITALS

The damage caused to so many hospitals by air raids, combined with the necessary extension of the hospitals of the country involved in the new national health service, has aroused considerable interest in the design of hospitals. An excellent example of this is contained in the plans for rebuilding of St. Thomas's Hospital, probably one of the most severely damaged hospitals in London. The situation of this hospital on the banks of the Thames opposite the Houses of Parliament lends itself to imaginative planning, and each ward is to have an extended sun-room affording a view of the river. Wards are to be divided by movable partitions fitted into aluminium pillars, to give any size of room needed. Air-conditioning is to be installed, and the claim is made that the hospital will be the first in Britain to use an electrostatic air-cleaning system.

There is, however, a growing consensus of opinion that fine buildings are not the end-all and be-all of hospital planning, and that an attempt should be made to make the interior less awe-inspiring to the patient. An interesting development in this direction is the scheme sponsored by the Royal Society of Painters for providing pictures for hospitals. Other improvements that have been proposed are the provision of dressing rooms for women patients, and the provision of projectors in waiting rooms for showing health films. The Red Cross and St. John organizations are also arranging to carry on in civilian hospitals the great work they did during the war by adequate libraries and librarians in hospitals.

WILLIAM A. R. THOMSON

London, July 1946.

We name certain operations after certain well-known surgeons merely because it is customary and more convenient, and it is often the best known sponsor rather than the originator of a certain operation who receives all the praise and credit.—R. Maingot.

ABSTRACTS FROM CURRENT LITERATURE

Medicine

The Use of Penicillin in the Treatment of Syphilis of the Central Nervous System. Callaway, J. L., Noojin, R. O., Flower, A. H., Kuhn, B. H. and Riley, K. A.: *Am. J. Syph., Gonor. & Ven. Dis.*, **30:** 110, 1946.

In this article the literature on the subject is reviewed to date. They point out that in the treatment of neurosyphilis intracisternal injection of penicillin has been tried and found to be very dangerous. Because of the obvious dangers of intrathecal injection and the good results obtained by intramuscular injection it was felt that the intramuscular method of administration was preferable. The authors presented the results of treatment on one hundred unselected cases of neurosyphilis. There were 37 asymptomatic cases, 6 diffuse meningovascular, 11 tabes, 7 taboparesis and 39 general paresis. They found that electroencephalograms were of some value in determining the results of treatment especially in the cases of general paresis. Handwriting was also used as a test. The first 74 patients were treated with 50,000 units of penicillin intramuscularly every three hours for eighty doses. The remaining 26 got 10,000 units every three hours for five doses, then 50,000 units every three hours for 79 doses, in each case the total was four million units; 60% showed definite clinical improvement associated with definite improvement in the cerebrospinal fluid findings; 31% showed clinical improvement alone; 4% showed improvement in the cerebrospinal fluid without clinical improvement; 5% showed decided clinical deterioration; 8% of total developed negative cerebrospinal fluid reactions. Those patients who had received no previous chemotherapy did better than those who had received either adequate or inadequate chemotherapy. Previous fever therapy given six months before exerted no effect on penicillin response. Febrile Herxheimer reactions were frequent but in no cases was it necessary to terminate the therapy. They pointed out that extreme care should be taken in cases of known cardiovascular syphilis in order to prevent serious Herxheimer reactions. They suggested that penicillin and fever therapy combined, may prove better than either alone, although they do not report any cases treated in this manner. PRESTON ROBB

Observations on the Treatment of Scarlet Fever with Penicillin. *Am. J. M. Sc.*, **211:** 4, 1946.

One hundred and eighteen cases of clinical scarlet fever, occurring in young adults, were treated with penicillin, to determine the minimum effective dosage for therapy and for ridding the nose and throat of hæmolytic streptococci. As convalescents may disseminate virulent organisms, elimination of this "carrier phase" is important in the group control of respiratory disease. Sulfonamides have proved ineffective for the purpose, but recent reports on the use of penicillin are favourable.

Three dosage schedules were tried. One group of patients received 10,000 units q. 3 h. for three days, a total of 240,000 units. A second group were given the same dosage for three days, then 10,000 units q. 6 h. for three more days, a total of 360,000 units. The third group had 80,000 units per day for four days, and 40,000 units per day for four additional days, a total of 480,000 units in eight days.

Symptomatic improvement with temperature dropping to normal in 24 to 48 hours followed in all cases. Recurrence of fever, with rhinitis, otitis media, sinusitis, or adenitis after completion of therapy was considered a complication. By this criterion, 31% of the 240,000 unit series, and only 6% of the 480,000 unit series suffered setbacks. The initial throat culture was positive for beta-hæmolytic streptococcus in 76% of the cases. Recurrence of positive cultures was noted in 77% of the low dosage series and only 8% of the organisms were identified as Types A-17 and A-19. Of those typed, 72% were sulfonamide resistant in concentrations of 25 mgm. per 100 or more.

The conclusion drawn from these observations is that "The use of 480,000 units of penicillin over an 8 day period is a satisfactory method for the treatment of scarlet fever, and for preventing the establishment of a beta hæmolytic streptococcus carrier state in the convalescent patients". Data based on later additional cases suggested that "the duration of therapy is as important as the total dosage of penicillin used". R. CAMERON STEWART

The Response of Cirrhosis of the Liver to an Intensive Combined Therapy. Morrison, L. M.: *Ann. Int. Med.*, **24:** 465, 1946.

A small but carefully controlled series of 62 patients with chronic hepatitis was divided into three groups, and each treated for two years over an eight year period. One group of 23 patients was treated only by such methods as were in use in 1938, that is by paracentesis, diuresis, high carbohydrate diet, and palliative therapy; this group contained 11 cases without ascites and 12 cases with ascites, and was called the untreated group. A second group of 19 cases was treated by a modified "Patek' regimen consisting of a nutritious high protein, moderate carbohydrate, low fat diet, liver extract injections and vitamin B complex therapy. This group contained 9 cases without ascites and 10 cases with ascites. A third group of 20 patients was treated intensively with a combined therapy which consisted of a maximum protein (three meat servings daily plus skimmed milk) high carbohydrate, low fat diet, daily injections of 5 c.c. of a "whole" liver extract, highly potent injections of vitamin B complex, daily oral vitamin B complex and multiple (total) vitamin capsules orally, together with 2 grams each of methionine and choline daily. This consisted of 11 cases without ascites and 9 with ascites.

Treatment with the intensive combined method of therapy resulted in reducing the mortality rate in the compensated group (without ascites) over a two year period of time to zero (1943-45) as compared with 27% mortality in the control group (1938-40). The intensive combined therapy in the group with ascites reduced the mortality rate from 75% in the control group to 11% in the treated group (1943-45).

Treatment with the intensive combined therapy resulted in a sharp reduction in the length of the disability period of from 82% (1938-40) to 28% (1943-45) in the groups without ascites; from 83% to 66% in the groups with ascites.

The intensive combined method of therapy resulted in a remission of all signs and symptoms in 64% of cases of the group without ascites, as compared with remissions in only 10% of cases in the control group; in those with ascites, remission occurred in 34% of cases as compared with none in the corresponding control group. S. R. TOWNSEND

Surgery

The Regional Injection of Penicillin in Local Infections. Rose, D. and Hurwitz, D.: *New England J. Med.*, **234:** 291, 1946.

The direct injection of penicillin into areas of localized infection is a highly successful method of therapy. Cure is more rapid than by any other means and prolonged disabiity, as well as the deformity of surgical intervention, can often be avoided. The outer circumference of tenderness surrounding the infection is delineated and penicillin in saline injected centrally from two or more points. The injections are painful in direct proportion to the volume injected and to the density of tissue. Concentrations of penicillin as high as 60,000 units per c.c. cause no untoward effect, injection once daily is sufficient and surgery is best withheld until complete localization of infection results.

Twenty-four cases are cited to indicate the excellent results obtained with this method of therapy. In no case was there any evidence of spread of infection as a result of treatment. NORMAN S. SKINNER

Pedicle Grafts from the Arm for Reconstruction About the Face. Jenkins, H. P.: *Surg. Clin. N.A.*, **26:** 20, 1946.

The author presents four cases of facial defects that required both skin and soft tissue. These were obtained by pedicle grafts from the arm. The cases include an ulcer of the forehead following an old propeller injury and a recurrent lupus vulgaris lesion which had been excised and pedicle grafted twenty years before and which later showed a basal cell carcinoma on the margin of the first graft. The third case was a large right sided congenital nævus which had been treated previously by radiation and carbon dioxide snow. A necrotic "malignant lesion" subsequently developed and extended into the nose. Malignancy was not proved in this third case. The fourth was a malignant degeneration following radiation therapy for a pustular dermatitis of the nose. The cartilage had been invaded.

All four cases were successfully treated by accurately outlining the required shape and size on the defect on the arm. This was delayed in two or more stages and eventually attached to the face by a pedicle with the arm and head immobilized in plaster. The pedicle was divided in 12 to 14 days and the brachial defect skin grafted. The graft to the face was later thinned and trimmed after several months had elapsed.

The author advocates the use of gentle massage with cotton applicators every half hour during the first 24 hours to encourage venous return along the base of the pedicle. He lays stress on the effect of gravity in aiding or retarding this flow. Penicillin was used routinely. Before the pedicle was divided the author used rubber tourniquets to determine whether the graft had sufficient vascular supply when the pedicle was obstructed.

The Early Management of Facial Injuries. Slaughter, W. B. and Wong, W.: *Surg. Clin. N.A.*, **26:** 2, 1946.

Early management of facial injuries is too often undertaken without regard to the final cosmetic result. The author reviews the essentials of a correct physical examination in these cases, laying emphasis on x-rays in the diagnosis of hidden severe lesions. Treatment is divided into immediate, delayed and late, depending on the time interval since injury took place and the degree of infection present when treatment is begun. In early cases he advocates sulfa therapy, reserving penicillin for the obviously grossly infected cases or where protein destruction is already under way.

Abrasions should be thoroughly cleansed, if need be with soap and a small brush, removing larger particles with a needle or B-P blade. Lacerations after an equally rigorous cleansing should be sutured with fine silk. Special attention is laid on wounds of the scalp, eyelids, nose and lip. In the latter the correct approximation and alignment of the mucocutaneous junctions is imperative. Except around the mouth where no dressings were used he advises collodion dressings. Tongue lacerations heal rapidly as do most other mouth injuries. In dealing with ear lacerations involving cartilage the retention of all available soft tissues is advisable in the initial repair. Subsequent plastic surgery may require all this tissue for a cosmetic result. Usually no anæsthetic is necessary in early treatment; 1% novocaine with 1:10,000 adrenaline is satisfactory in later cases.

Nowhere is early treatment more important than in dealing with fractures, especially those of the mandible and maxillæ. In the author's experience mandibular fractures account 86% of all fractures of the face bones. Zygomatic fractures contribute 5%, transverse facial 4%, and nasal only 2%. Of mandibular fractures 95% are compound, nevertheless if treated within 4 to 6 hours of injury only 10% become infected. If treatment is delayed one week this figure rises to 60%. Drainage of mandibular abscesses is best effected extraorally. Zygomatic fractures are diagnosed by irregularity of the orbital contour and in the author's experience may be reduced safely several days after the original insult. They are seldom compound. The Gillies elevation technique is satisfactory although sometimes an open reduction may have to be resorted to.

Nasal fractures are probably more common than the author's experience would suggest here. Excellent local anæsthesia may be obtained by packing the nose with 4% cocaine and injecting 1% novocaine over the bridge and sides of the nose. After reduction an intranasal splint may be used up to 72 hours. The author feels that after this period the danger of pressure necrosis of nasal mucous membrane is real. Accordingly he uses external moulds or splints for one week after reduction to maintain the desired contour.

The author illustrates his argument with sketches on suturing as well as the uses to which the Z-plastic procedure may be put. Brief mention is made of cartilage and cancellous bone grafts in late treatment. He emphasizes that therapy should proceed on the dictum that the doctor's one chance to help the patient is the time he first sees him.

A Discussion of Controversial Points in Amputation Surgery. McKeever, F. M.: *Surg., Gyn. & Obst.*, **82:** 495, 1946.

A study of 2,988 amputations at the Percy Jones General Hospital from January 1943 to October 1945 formed the basis for the opinions expressed in this article.

The open circular amputation, less accurately known as the "guillotine", was mandatory in the U.S. Army in all forward installations. The arguments in favour of this, as opposed to the British and Canadian Armies' permitted flap amputation in forward areas are set forth as: (1) less liability to infection (2) a second operation to obtain the best possible stump for a young man is often necessary anyway. Sulfadiazine or penicillin was used routinely for 48 hours before surgery. The use of sulfonamides topically was discontinued when it was found that there were less hæmatomata and better healing without.

The technique of final amputation is discussed and emphasis placed on not separating skin from fascia, avoiding excess muscle, incision of periosteum at the saw line, careful hæmostasis, drainage for 48 hours, no injection or stretching of nerve ends.

The phantom limb syndrome is discussed. The persistent "painful phantom limb" is rare and often associated with the use of morphine and alcohol, severe maladjustment or frustration.

As to end-bearing stumps, the author commends the Syme, advocated by Canadian surgeons. It is recommended that the disarticulation of the ankle be from inside out and the os calcis be removed subperiosteally so that the blood supply to the heel flap is not endangered. Care to maintain the flap over the end of the tibia is advised. Chopart's amputation is rarely practicable. The author is not enthusiastic about the Gritti-Stokes because the patella sometimes fails to unite, but approves of the tendoplastic end-bearing thigh stump.

Upper limb amputations are described in detail. It is stated that amputation through the proximal or distal row of carpal bones is successful. BURNS PLEWES

The Present Position of Surgery in the Treatment of Bleeding Peptic Ulcer. Gordon-Taylor, G.: *Brit. J. Surg.*, **33:** 336, 1946.

The purpose of this paper is "to paint a picture illustrating the results of the best modern therapy gleaned from the recent experience of many physicians and surgeons of many institutions", and represents a review of 1,700 cases of ulcer hæmorrhage. The ap-

proach has been to study cases treated by non-operative measures, scrutinizing particularly the fatal cases and conjecturing the percentage which might have been saved by surgery.

There has been a notable improvement of medically managed cases in the past 10 years, the mortality now being about 10 or 11% despite the many aged and infirm patients met with. This is attributed to the increased attention given to the assessment of the amount of bleeding, the management of transfusion, the prevention of dehydration and early feeding. "Blood transfusion given at the rate of about 40 drops a minute is perhaps the most valuable single factor in the saving of life."

In the various series presented the best results have been obtained where there was close co-operation between physician and surgeon. Indications for urgent surgery are: (1) cases of "terrific" bleeding, when it appears obvious that some large vessel has been eroded; (2) in the rare cases of concomitant hæmorrhage and perforation; (3) urgent surgery always to be considered in patients over 50, especially if the patient has thickened tortuous radial arteries, if severe ulcer pain preceded or persists following hæmorrhage takes place under appropriate medical control. In Avery Jones' cases of gastric ulcer in men over 50, half the patients died after one recurrent hæmorrhage and 60% after the second bleeding. (4) Where pyloric or duodenal stenosis is present or mid-gastric narrowing is considerable. As to the time of operation, the first 48 hours is the optimum period for surgical intervention; but there is now good evidence that recovery may follow surgery at a much later time.

"No one technique is appropriate to every case for which operation has been judged necessary." A description is given of the technique devised by Judin of Moscow. This is known as the "snail-like" method of closure using the bunched-up duodenal stump to tampon a large penetrating duodenal ulcer. A. L. JOHNSON

Obstetrics and Gynæcology

An Evaluation of the Hogben Pregnancy Test. Foote, E. C. and Jones, G. E. S.: *Am. J. Obst. & Gyn.*, **51**: 672, 1946.

It would seem from the present study that a normal intra-uterine pregnancy cannot be diagnosed by the Hogben test with any accuracy before the fortieth day of gestation. Following this period the expected accuracy approaches 96%. Approximately two-thirds of threatened or incomplete abortions will give positive Hogben tests. Cases of corpus luteum cysts, suspected of being ectopic pregnancies, give negative results.

These results are comparable with those obtained with the Friedman test and show the Hogben test to be a satisfactory one for clinical use. The most important clinical advantage of the Hogben over the Friedman test, aside from technical superiority in the laboratory, is that it gives no false positive results.

ROSS MITCHELL

Vaginal and Cervical Cytology in Uterine Cancer Diagnosis. Ayre, J. E.: *Am. J. Obst. & Gyn.*, **51**: 743, 1946.

This report consists of an analysis of one hundred cases of genital malignancy studied in the Gynæcologic Cytology Division of the Royal Victoria Hospital. Photomicrographs of representative cases are presented. Of the one hundred cases giving a tissue diagnosis of malignancy, the cytology smears showed an average of 6%. Smears taken routinely from the external cervical os have been found more reliable in diagnosis than vaginal smears. An interesting observation is that many of the cases of malignancy in the postmenopausal age group show evidence of associated œstrogenic activity.

The smear technique has been shown to be of value in detecting cancer at an early stage. It has proved helpful too in benign cases simulating malignancy clinically. Negative cell smears in such cases have been proved correct by biopsy. The method has also been found to be of value in assessing radiation therapy.

A new technique, the centrifuge cytology technique, is presented briefly with illustrations. ROSS MITCHELL

The Prognosis of Immaturity. Asher, C.: *Brit. M. J.*, **1**: 793, 1946.

The subject of immaturity is considered from the point of view of immediate and ultimate prognosis. The relation of birth weight and sex to mortality is discussed. A review of the literature on the after-history of immature infants is given. The results of a follow-up of 217 immature children from the point of view of mental and physical development are given. The results suggest that both mental and physical development are often delayed, and that many children do not reach a high level of intellectual attainment. Four possibilities with regard to mental and physical development are discussed. ROSS MITCHELL

Oto-Rhino-Laryngology

Diagnosis and Treatment of Nonsuppurative Sinusitis. Roberts, S. E.: *Arch. Otolaryn.*, **42**: 198, 1945.

The symptoms of nonsuppurative sinusitis are as follows: (1) postnasal discharge of a mucoid type without empyema of the sinuses; (2) sensation of nasal obstruction of stuffiness without actual mechanical obstruction; (3) pain or headache referable to the sinuses without clinical or roentgenographic evidence of suppuration of the sinuses; (4) fatigue without obvious organic physical findings; (5) neuritis in various parts of the body, especially suprascapular; (6) allergic manifestations.

This new "sinus syndrome", reported by the author, is based on observation of more than 4,000 patients over a period of 8 years.

Pathological examinations showed mucus throughout all the cells instead of pus and a circulatory block so that lymph escaped through the mucous membranes.

The management of the patient consists in investigating the dietary history; his habits such as sleeping, smoking, consumption of alcoholic liquors and allergic reactions; vitamin and glandular deficiencies or overactivities; the condition of the teeth; psychoneurotic symptoms, etc. Therefore the treatment begins with an individualized diet; it includes vitamin therapy.

V. LATRAVERSE

Pathology

Pathological Aspects of Acute Epidemic Hepatitis, with Especial Reference to Early Stages. Wood, D. A.: *Arch. Path.*, **41**: 345, 1946.

This paper reports 10 cases of epidemic hepatitis in men between the ages of 19 and 28 years with 8 patients dying within 10 days of onset of symptoms. Six of these men had been wounded 3 or 4 months previously and had all received multiple transfusions. The 10 cases are considered to fall into 4 fairly distinct groups: the first group showed marked mental and neurological disturbances; the second consisted of 1 patient with rupture of the spleen on the 2nd day of illness; the third group comprised 5 previously wounded men with a virulent and overwhelming hepatitis and might be cases of "homologous serum jaundice"; the last group of 2 cases followed a more usual course.

The livers showed changes similar to those of "acute yellow atrophy". In the earliest specimen (2 days after onset) the liver cells were swollen and detached from one another, only minimal autolysis having occurred. By the 10th day most of the damaged liver cells had become autolyzed and cellular debris removed. The hepatocellular necrosis was diffuse and predominantly central. In all there was an

infiltration of inflammatory cells, chiefly lymphocytes. The two cases which survived longest (approximately 62 and 47 days) showed a nodular parenchyma, in part due to the irregularity of the distribution of the lesions and in part to attempted regeneration; 50% of the livers were shrunken. Normal weight was observed in cases where death occurred very early and in the cases of longer duration showing regeneration.

The spleen was enlarged in each instance, the weight varying from 211 to 622 gm. In the early stages it was soft, later becoming firmer. The early microscopical picture was characterized by hyperplastic Malpighian bodies, lymphocytic infiltration of pulp reticulum and œdema of the supporting stroma. Later the Malpighian bodies became small and compact. Lymph nodes were enlarged and spongy and showed an acute lymphadenitis. Arrest of spermatogenesis occurred, associated in most cases with an orchitis. No characteristic anatomic lesions were found in the brain to account for the neurological disturbances. A. L. JOHNSON

Pædiatrics

Kaposi's Varicelliform Eruption. Studies on Etiology. Jaquette, W. A., Convey, J. H. and Pillsbury, D. M.: *Am. J. Dis. Child.*, **71:** 1, 1946.

Kaposi's varicelliform eruption has also been called acute vacciniform pustulosis and acute varioliform pustulosis. Umbilicated pustules appear on an inflamed œdematous skin a few hours after the onset of high fever in a patient already suffering from a dermatosis, usually eczema. Lymphadenopathy of the regional nodes occurs. The fever generally lasts two to three weeks, and successive crops of pustules may come out. Slight scarring commonly results. Recovery is usual, although some fatalities have been reported. The cause has not been established. A secondary infection of an underlying eczema with *Staph. aureus*, or with the virus of herpes simplex, or with attenuated vaccinia virus plus *Staph. aureus*, have been suggested.

A case is reported in detail in a negro boy of six months. He had had a mild eczema for about two months before the onset. An older brother was vaccinated for smallpox about three weeks previously, with a characteristic "take". The patient had umbilicated pustules on the face, scalp and neck some slightly hæmorrhagic crusting, a seropurulent exudate. There was an irregular fever, coming down by lysis. The white blood count was as high as 43,000, 70% being polymorphonuclears. The tuberculin and Wassermann reactions were negative. Passive transfer tests gave positive reactions for cow's milk and egg. The treatment included 1:8,000 potassium permanganate compresses, 5% sulfathiazole ointment in an emulsion base, and sulfathiazole by mouth. Gradual improvement followed, the skin being clear in about three weeks except for scarring and eczema. The latter was gone in about two months.

Cultures from the lesions showed *beta hæmolytic strep.* and *Staph. aureus.* Virus studies were also made, giving "evidence that the herpes virus was present in the cutaneous lesions, and that during his illness herpes-neutralizing antibodies developed in his serum". The authors note that "this suggests strongly that the herpes virus, possibly in association with the staphylococci and streptococci, was involved in an etiological relationship" in this case. Eleven months later the patient was vaccinated with vaccinia virus by the multiple pressure method. A typical nonimmune reaction followed.

The authors deduce from their findings "that infants with eczema should probably be protected from any one suffering from a herpes infection, as well as from persons who have been recently vaccinated". It is noted in an addendum that some additional reports present evidence that the etiologic agent is the virus of herpes simplex, and that others implicate the vaccinia virus. The authors think it may be true that both can produce the syndrome. R. CAMERON STEWART

Radiology

Hiatus Hernia of the Stomach as a Source of Gastro-Intestinal Bleeding. Mendlesohn, E. A.: *Radiology*, **46:** 502, 1946.

Sixteen cases of hiatus hernia of the stomach have been observed in 1,000 consecutive gastro-intestinal examinations in the x-ray departments of Sparks Memorial Hospital and the Holt-Krock Clinic. The hiatus hernia may not be combined with a congenital short œsophagus. The majority of the patients were beyond 50 years of age and in five of the sixteen cases there were other gastro-intestinal complications. Three of the cases were reported (1) gave an impression of cardiac disease; (2) duodenal ulcer and (3) a malignant neoplasm within the gastro-intestinal tract.

The cause of bleeding in hiatus hernia is due to venous congestion in the herniated portion of the stomach due to muscular compression of the diaphragm. This can be easily traumatized and produces superficial bleeding erosions or deeper ulcerations. The authors feel that bleeding from a hiatus hernia can be established as a cause of intestinal bleeding and accompanying pain only if every other possible source of bleeding has been ruled out by a thorough clinical and x-ray study and continued observation of the patient.

The Management of Malignant Tumours of the Testis. Pendergrass, E. P., Chamberlain, G. W., Selman, J. and Horn, R. C.: *Am. J. Roentgen.*, **55:** 555, 1946.

A series of 43 patients with known malignant tumours of the testis is reviewed. The overall five year survival rate is 42%. Histopathologic type, freedom from demonstrable metastases on admission, and carefully planned irradiation are the principal factors affecting the prognosis. The five year survival rate in patients free from demonstrable metastases on admission and receiving "conventional" therapy is 71%. In those with metastases on admission, the corresponding result is 30%. Five patients with heterologous tumours had metastases on admission, and all succumbed to the disease. One patient with a homologous tumour had metastases when first seen and is alive and free from evidence of disease five years after orchiectomy. There are four patients (of a total of 24) who had clinically evident metastases at some time during their illness, and who are alive and well five to sixteen years after their last treatment, and in one case there had been a supraclavicular mass.

We have been unable to demonstrate any difference in end-results between preoperative and postoperative irradiation. Preoperative or immediate postoperative irradiation is recommended in all patients with a malignant tumour of the testis, regardless of the presence or absence of clinical evidence of metastases. R. C. BURR

Roentgenological Findings in the Lungs of Victims of the Cocoanut Grove Disaster. Finland, M., Ritvo, M., Davidson, C. S. and Levenson, S. M.: *Am. J. Roentgenol.*, **55:** 1, 1946.

In this article the author reviews briefly the clinical features of the respiratory tract injuries among the victims of the Cocoanut Grove disaster, as observed at Boston City Hospital. He then goes on to describe the significant roentgenographic changes observed in the cases admitted and relates them to the clinical and autopsy findings. A roentgenological report of the cases studied at the Massachusetts General Hospital which had previously been published, is reviewed and used for comparison.

Except in a few instances, in the cases admitted to the Boston hospital, roentgenograms were not made until 36 hours after the fire. Additional roentgenogram examinations, or a series of them, were made in 57 of the cases during their hospital stay, and also in cases who returned for follow-up examinations. The roentgen

changes found were essentially similar to those described in the cases studied in Massachusetts. Most of them could be ascribed to atelectasis and emphysema resulting from a severe membranous laryngotracheobronchitis with obstruction. Reproduction of roentgenograms taken in some of the severe cases, are inclined to illustrate the various types of abnormality seen and tables show the correlation of roentgenological and clinical findings. The clinical symptoms and physical signs were frequently more severe and extensive than the changes visible in the roentgenograms. The autopsy findings in the fatal cases were consistent with the roentgen changes. In the recovered cases in which follow-up examinations were done, no residual abnormalities were detected.

MARGARET H. WILTON

Anæsthesia

On the Pressor Activity and Stability of Different Mixtures of Ephedrine and Pituitary (Posterior Lobe) Extract. Melville, K. I.: *Anæsthesiology*, **7**: 176, 1946.

The author has previously reported experimental evidence to show that (*a*) ephedrine augments the pressor response to small doses of pituitary extract; (*b*) ephedrine diminishes or abolishes the depressor response and deleterious cardiac effects of large doses of the extract, and (*c*) a mixture of ephedrine and pituitary extract is more effective than twice the quantities of the individual agents in restoring the blood pressure, respiration and general collapse in dogs "shocked" by prolonged intravenous injection of histamine.

Bourne has tested the effects of a mixture of ⅜ grain of ephedrine and 5 units of pressor pituitary extract in a large series of patients showing varying degrees of circulatory failure following spinal anæsthesia. The results have been uniformly good.

The present author has tested the effect of mixing the two agents in varying proportions in an attempt to ascertain the optimal combination for good clinical results. It was also desired to determine the stability of prepared mixtures stored in ampoules when kept in a refrigerator.

It was demonstrated that the deleterious effect of a large dose of pituitary extract can be completely abolished by relatively small doses of ephedrine. However, the most effective combination, in respect to pressor activity and effect of repeated doses, appears to be a mixture containing a ratio of 4.8 mgm. of ephedrine to 1 unit of pressor pituitary extract (or the clinical mixture of ⅜ grain ephedrine together with 5 units of pitressin).

It was also shown that large doses of the extract mixed with large doses of ephedrine lead to marked deleterious circulatory effects.

Finally the ampouled and sterilized mixtures in the various proportions studied show no significant loss of activity as long as seven to eleven months after preparation when kept in the refrigerator.

F. ARTHUR H. WILKINSON

Industrial Medicine

Tuberculosis in Industry from the Viewpoint of the Physician in Industry. Pollak, M.: *Occup. Med.*, **1**: 302, 1946.

The effectiveness of a mass attack on tuberculosis has been convincingly proved by the recent experience of the armed forces. For example, the death-rate from tuberculosis in the U.S. Navy dropped from 17.3% in World I to 1.8% in World War II. Fluororoentgenography has been developed to the point where a mass attack on tuberculosis is now within the means of every community. In this article the author points out how industry can play a leading rôle in the attack.

Various studies reported in literature have demonstrated the importance of industrialization as a contributing factor to the high mortality and morbidity rates of tuberculosis in the urban population. The loss incurred by industry due to absenteeism resulting from sickness is important from an economic standpoint. Tuberculosis is a contagious and a preventable disease and therefore an important consideration of the industrial physician.

Recent literature has also emphasized the value of periodic physical examinations to help in the early detection of the disease. The author refers to the results of the tuberculosis case-finding surveys instituted on a national scale by the United States Public Health Service. From May, 1942 to April, 1944, units of the service made roentgenological examination of the chests of 576,828 industrial workers and in 1.5% of them found evidence of pulmonary tuberculosis in some form.

Details are given of the experience of the Caterpillar Tractor Co., Peoria, Illinois, where the policy of making routine roentgenograms of the chest in the course of preplacement examinations has been justified and is in effect. Any roentgenogram showing abnormality is submitted to the expert employed by the community for the control of tuberculosis.

The Peoria Production Shop is concerned with the employment of workers whose tuberculosis has become arrested. Here they are hardened to the everyday rigours of the normal working day under sheltered conditions and under medical supervision.

MARGARET H. WILTON

Neurology

Studies on Neuromuscular Dysfunction. IX. Neostigmine Therapy of Chronic Spastic Paralysis from Cerebral Lesions. Kabat, H. and Jones, C. W.: *J. Nerv. & Ment. Dis.*, **103**: 107, 1946.

This is one of a series of articles on the treatment of neuromuscular disorders with neostigmine. They outline the action of neostigmine by inhibiting the cholesterinase and allowing the acetylcholine to accumulate at the myoneural junction, in this way facilitating the transmission of excitation to the skeletal muscle. Certain authors claim the drug to be of value in the treatment of chronic rheumatoid arthritis, subacromial bursitis, chronic facial paralyses, cervical intramuscular fibrositis, and low back pain following fractures and other injuries. In this paper the authors report the results of treatment of a series of cerebral lesions that have caused spasticity. There were eleven patients with hemiplegia of more than one year's duration, eight patients with hemiplegia of less than one year's duration, six patients with a spastic cerebral palsy, three patients with an athetoid type of cerebral palsy, and two patients with an ataxic cerebral palsy. The drug was administered orally and subcutaneously. They found that there was a decrease in spasticity and that both voluntary motion and sensory function were facilitated. Improvement was maintained after the drug was discontinued. They recommended that passive and active exercise as well as muscle re-education should be included as part of the therapy. They were unable to offer any explanation as to the mechanism of action of the drug in causing the release of spasticity.

J. P. ROBB

Treatment of Causalgia. Rasmussen, T. B. and Freedman, H.: *J. Neurosurg.*, **3**: 165, 1946.

In the authors' series there were 100 cases of causalgia of varying degrees of severity in Chinese soldiers who had been wounded in the north and central Burma campaign. They were treated by paravertebral injections of procaine, and surgical sympathectomies. In 48 cases the characteristic pain appeared within six hours of the injury. In 23 cases the pain appeared within one to three days, and in a few the appearance of the pain was delayed up to 8 weeks. Diagnostic paravertebral injection of procaine was used in 91 of the cases. Complete temporary relief was obtained in 73 patients, marked relief in 16, and no relief in 2.

Thirteen of the 91 patients obtained complete relief by means of the injection, either immediately or within 4 weeks. Moderate relief was obtained in 32, while in 46 the relief of pain obtained by this method was inadequate. Preganglionic and postganglionic operations were done for causalgia of the arm. By far the best results were obtained with the preganglionic type of operation, there being 13 of 14 who got complete relief with this procedure, compared with 14 of 21 who obtained complete relief with the postganglionic type of procedure. The results of sympathectomy for causalgia of the leg were not satisfactory, four of five patients continued to have pain. J. P. ROBB

The Effect of Introduction of Isotonic Sodium Chloride Solution into the Cisterna Magna of the Dog on the Cell Count of the Cerebrospinal Fluid. Bedford, T. H. B.: *J. Physiol.*, **104**: 299, 1946.

Experimentally the author introduced isotonic sodium chloride solution, Ringer's solution and distilled water into the cisterna magna. After five hours samples of the cerebrospinal fluid were withdrawn, and the cell counts studied. In the case of the isotonic sodium chloride, polymorphonuclear leucocytes generally unaccompanied by other reactive cells were present in the cerebrospinal fluid at the end of nine of thirteen experiments. The Ringer's solution and the distilled water did not cause reactive cells to appear. These experiments would suggest that if foreign solutions have to be introduced into the subarachnoid space, then Ringer's solution and distilled water are better than isotonic sodium chloride. J. P. ROBB

Cyclic Oculomotor Palsy. McGregor, I. S.: *J. Neurol., Neurosurg. & Psychiat.*, **8**: 23, 1945.

A case of this unusual condition is described. An eight year old child since birth had had a right third nerve palsy with almost complete ptosis of the lid, dilated pupil, and an external strabismus. Every few minutes day and night, the lid would involuntarily lift and the pupils would become equal in size. This would last for fifteen seconds. The divergent squint did not return completely to normal during this phase. Prostigmin had no effect. No adequate explanation could be offered for the cause. Some thirty cases have been reported, some being present at birth, and others following disease. The interest in this oculomotor palsy lies in its cyclic or rhythmic and automatic character. It was felt that regardless of the cause, the site of the disturbance was probably in the nuclei of the third nerve. The author suggested that there might be some storing of subthreshold stimuli which when they reached adequate intensity would overflow periodically to produce the lid rising and associated changes of the active phase of the cycle. J. P. ROBB

Lesions of the Central Nervous System in Herpes Zoster. Gordon, I. R. S. and Tucker, J. F.: *J. Neurol., Neurosurg. & Psychiat.*, **8**: 40, 1945.

Although the lesions of the nervous system in herpes zoster are usually confined to the posterior root ganglia and the ganglia associated with certain cranial nerves, various authors have shown that the virus can attack the central nervous system as well. The cases have fallen into one of three types. The first type are lesions of the anterior horn cell, the second of the tracts of the spinal cord producing a transverse myelitis and the third are lesions of the brain causing an encephalitis. The possibility that some of the lesions are secondary vascular ones is considered by the authors of this article. They present three cases, on of each type. Their cases lived, and no pathological findings are recorded, however the findings of others are reviewed. J. P. ROBB

Pathology and Experimental Medicine

Terminal Pulmonary Venules in Mammalian Lungs. Macklin, C. C.: *Trans. Roy. Soc. Can.*, Third Series, Section V, **39**: 1945.

A large number of microsections, stained in diferent ways, and taken from seven regions of the lung representing the separate lobes of the common mammals, were studied in eleven species, including man. The evidence goes beyond the venules and includes arterioles and also the larger branches of the pulmonary arterial and venous trees. These vessels are surrounded by expanding and contracting tissue, and the influence of this is to lengthen and widen them in inspiration. Mainly by the contraction of their longitudinal elastic fibres, they are shortened in expiration, and undergo in that phase a certain amount of narrowing. This means that their capacity is increased in inspiration and decreased in expiration. Thus new light is shed on the "pumping" action of lung tissue on the pulmonary blood flow, which is most marked in young healthy subjects in vigorous exercise. The lesser circulation is presented as a bridge between the right and left hearts, which is capable of enlargement to meet the need of increased traffic, and which has a certain propulsive action. The findings spread the inspiratory volume enlargement over the whole pulmonary circulatory arc rather than confining it to the capillaries. Lymph flow, too, is aided by respiratory movements on account of the fact that the lymph vessels, like the intrapulmonic arteries and veins of the pulmonary system, are lengthened and dilated in inspiration. C. C. MACKLIN

OBITUARIES

Dr. Thomas Arthur Carson, aged 68, who served for 23 years as chief medical officer at Christie Street Hospital, died June 29 at his home in Toronto. He retired from office in 1943 and had been in ill health for some time.

A veteran of the First Great War, Dr. Carson saw service overseas with the R.C.M.C. and held the rank of captain. He was born at Mono Mills and attended high school in Orangeville. Graduating in medicine from the University of Toronto in 1903, he established a practice in Orangeville. Enlisting for war service in 1916, he joined the staff of Christie Street Hospital soon after his return to Canada.

Dr. Carson was prominent in the Masonic Order, first Master of Dufferin Lodge and life member of Harris Lodge, Orangeville, and Alpha Lodge, A.F.&A.M., Toronto. He was also a past District Deputy Grand Master for District "D," Toronto. He was an elder of Howard Park United Church. In his younger years he was active in soccer and lacrosse.

Surviving are his widow, a daughter, and a son.

Dr. William John Elliott died on May 29 in Brandon, Man. Doctor Elliott, who was born at Bluevale, Ont., was sixty years of age. He came to Manitoba in 1906, and graduated in medicine at the University of Manitoba in 1911. He practised in Minto until 1914, when he came to Brandon and gained for himself a high reputation as a medical practitioner.

Apart from his professional duties Dr. Elliott was actively interested in community affairs. He was a past-president of the Kiwanis Club and a member of the session of St. Paul's United Church.

Surviving are his widow, one son and one daughter.

Dr. Colin Graham, eye, ear, nose and throat specialist of Victoria, died in Vancouver suddenly June 8, presumably from a heart attack.

Dr. Graham, who left Victoria by the midnight boat Friday for Vancouver, collapsed and died in the C.P.R. waiting room following his arrival.

Dr. Graham had planned to go on from Vancouver to Banff as a delegate to the Canadian Medical Association's convention. Besides his widow he is survived by a daughter and a son.

Dr. Thomas Melville Hardie died on June 3 at his home in Chicago, in his 84th year.

Dr. Hardie was, at the time of his retirement, senior laryngologist of Chicago.

Born at Newcastle, near London, Ont., he received his early education there, before moving to Manitoba, where he completed high school. He was granted his medical degree from the University of Toronto and carried out post-graduate work in Berlin, Vienna and London, England. He resided and practised in Chicago.

He is survived by his widow, one son, a daughter, and a sister.

Dr. Benjamin Amedee LeBlanc, died at his home at Arichat, June 29. Born in Arichat, Nova Scotia, 67 years ago, he was educated at his home, and later graduated B.A., from St. Anne's College, Church Point. He received his degree in medicine from Dalhousie University in 1907, and practised in Arichat continuously until about eighteen months ago when ill health forced him to retire.

For twelve years he was a Conservative Member for Richmond County in the Nova Scotia Legislature, and from 1923 to 1933, was Minister without portfolio.

He was a widely esteemed citizen, and a skilful practitioner in the large area which he faithfully served for many years.

Dr. Arthur William Moody, veteran physician of Winnipeg and chief medical officer for the Manitoba Division of the Canadian Pacific Railway from 1914 to 1940, died on June 20 at his residence.

Born in Yorkshire, England, 78 years ago, he came to Canada at an early age. He was educated at the Collegiate Institute, Hamilton, Ont., taught school at Oak Lake, Man., then entered Manitoba Medical College. Graduating in 1895 he became house surgeon at St. Boniface Hospital, and next year went to the Winnipeg General Hospital as medical superintendent. He continued in that capacity for four years, then engaged in private practice. For many years he was an active member of the honorary attending staff of the General Hospital and assistant, and then associate professor of clinical medicine in the Faculty of Medicine of Manitoba University. He was a member of the University Council and of the Board of United Colleges. In 1928 he was elected a Fellow of the Royal Society of Arts of London, England. For two years he was president of the Conservative Club of Winnipeg.

He is survived by his widow, Elizabeth Holland Moody, who at the time of their marriage was superintendent of nurses, Winnipeg General Hospital, and has continued to take an active interest in nursing affairs; his son, Herbert H. G., a prominent architect; and two daughters, one the wife of Lester B. Pearson, Canadian Ambassador at Washington; the other Mrs. Grace Young, widow of Capt. Norman Young, headmaster of Ravenscourt School for boys, who was killed at Dieppe, August 1942.

Dr. John Matthew Munro died at his home in Odessa, Ont., June 5, at the age of 62 years.

Dr. Matthew graduated from Queen's Medical School in 1918, and for the past 20 years had lived in Odessa. In 1941 he was appointed coroner of the Township of Ernesttown in addition to being a coroner for the County of Frontenac. In 1943 he was secretary-treasurer of the Lennox and Addington Medical Association.

Dr. Panet Prendergast, clinical assistant in pædiatrics at the Herbert Reddy Memorial Hospital and former medical officer for M.D. No. 4, died May 31, at his home in Montreal.

Born in 1901, Dr. Prendergast studied at the University of Ottawa where he received his degree of Bachelor of Arts and Master of Philosophy and later graduated in medicine at the University of Montreal.

He is survived by his father and three sisters.

Dr. Peter Francis Quinlan, died on May 27 at his home in Stratford, Ont.

Dr. Quinlan was born in Ellice township. As a young man he taught school at Dublin, Ont., then attended medical school at the University of Toronto, graduating in 1903. After receiving his medical degree, he did postgraduate work in a New York hospital, then returned to Dublin to take charge of a practice for six months.

After practising for about a year in Bruce county, Dr. Quinlan came to Statford, and opened his practice in 1906.

During his 40 years in this community, he served terms as separate schools representative on the Board of Education and as separate schools representative on the Public Library Board. He was for 20 years president of the Stratford Liberal Association, and served a term as president of the Stratford Medical Society. He was also active in the work of the Holy Name Society of St. Joseph's Church, of which he was a staunch member and of Kilroy Council, Knights of Columbus, being a charter member of that organization. He was a member of the Stratford Club.

Professionally Dr. Quinlan's ability was recognized by his election to serve for eight years as a member of the Ontario Medical Council.

Kindly, sympathetic and understanding he was the ideal type of family physician and his wholesome sense of humour brought cheer to many a sick room.

He is survived by his widow, one son and two daughters.

Dr. Thomas Mallory Richardson, died at the Western Division of the Montreal General Hospital June 19, in his 52nd year.

A graduate of McGill University, he received his medical degree shortly before the First Great War.

Returning to Canada in 1920 he set up practice in Verdun. In 1939, at the outset of the late war, he joined the R.C.A.M.C., but was discharged for reasons of ill health in 1940 and resumed his practice. He was attached to the Montreal General Hospital.

Surviving are his widow, and a brother.

Dr. John Lawrence Shappert, 38 years of age, died in Sudbury, Ontario, June 26. Dr. Shappert graduated from Queen's University in 1936.

He is survived by his widow.

Dr. W. Newton Smiley, one of the oldest practising physicians of the province, died June 12 at Rawdon, Que., in his 90th year.

A graduate of the Medical College of Bishop's University, Dr. Smiley spent two years in Massachusetts before setting up practice in Rawdon in 1892. He became a leader in educational and church activities in the community.

He was born in Rawdon in 1857, later moving with his family to St. Lambert. He was a bachelor.

The health and welfare of every individual is the concern of society, and human solidarity beyond the boundaries of nationality, race, and creed is a true criterion of civilization.—G. F. Campbell.

NEWS ITEMS

Alberta

The Canadian Medical Asociation Alberta Division held its annual business meeting on Tuesday, June 11, at Banff. The following were elected as officers for the coming year: *President*—Dr. Harold Orr, Edmonton; *President Elect*—Dr. A. E. Wilson, Calgary; *Librarian*—Dr. H. C. Jamieson, Edmonton; *Honorary Secretary-treasurer*—Dr. W. Bramley-Moore, Edmonton.

A full report of the meeting has been published in the July issue of the *Alberta Medical Bulletin*.

Two hundred and eighteen Alberta members attended the Canadian Medical Association Convention held in Banff; of these 69 were from Edmonton, 83 fom Calgary, and 66 from the rest of the Province.

We are very pleased to be able to announce that Mr. W. G. Hunt, former Assistant Registrar of the College of Physicians and Surgeons of Alberta, has recovered sufficiently to be released from the hospital after four months there.

The United Church of Canada will spend $150,000 on enlargement and extension of the United Church hospital at Lamont.

The executive of the board of home missions of the United Church decided Thursday to give $50,000 toward the project, lend $50,000, and have the other third raised by the communities served and by the United Church constituency in Alberta.

Dr. Robert C. Riley of Calgary won the Horner Award for outstanding work of art with his oil painting "At Saskatchewan Crossing" in the Canadian Physicians' Fine Art and Camera Salon held in Banff during the Convention. Dr. T. E. Brown of Lethbridge won an Award of Merit for his water colour "Irrigation—Lethbridge, Alberta". G. E. LEARMONTH

British Columbia

The Vancouver City Council has at last, despite the efforts of a vociferous minority, passed a by-law which will ensure compulsory pasteurization of all milk sold within the City. After October 28, 1946, all sales of raw milk are banned. It is regrettable that the city officials did not also ensure protection of the city's water supply by continuing chlorination.

The Annual Meetings of the College of Physicians and Surgeons of British Columbia and the British Columbia Medical Association were held at Banff on June 11. These meetings were well attended, and representative of the profession throughout the Province.

Elected officers of the British Columbia Medical Association for the coming year are: *President*—Dr. Ethlyn Trapp, Vancouver; *First Vice-president*—Dr. E. J. Lyon, Prince George; *Second Vice-president*—Dr. Lavell Leeson, Vancouver; *Honorary Secretary-treasurer*—Dr. J. C. Thomas, Vancouver; *Directors-at-large*—Dr. G. O. Matthews, Vancouver, Dr. L. A. C. Panton, Kelowna, Dr. W. Laishley, Nelson, Dr. W. A. Clarke, New Westminster, Dr. S. G. Kenning, Victoria.

We point with pride and satisfaction to the election of Dr. Ethlyn Trapp as President of the British Columbia Medical Association. This is, we are sure, the first time a woman has held such high office in organized medicine in Canada. Dr. Trapp has worked consistently and successfully for the good of the profession, and this honour in indeed timely and fitting. We wish her good luck and continued success in her tenure of office.

Plans for a proposed Academy of Medicine building in Vancouver to house the College of Physicians and Surgeons of B.C., the British Columbia Medical Association, and the Vancouver Medical Association and Library, are proceeding. A site has been selected and purchased, and plans drawn. The proposal has been heartily endorsed by the profession at the Annual Meetings of the College and of the British Columbia Medical Association.

Plans are proceeding for the annual session of the Summer School of the Vancouver Medical Association. It will be held this year from September 9 to 13 inclusive. A number of prominent speakers have accepted invitations. Among these are: Dr. Elmer Belt, Urologist of Los Angeles; Dr. Simeon Cantril, Director of the Tumour Institute of the Swedish Hospital, Seattle; Dr. J. R. Lindsay, Associate Professor of Surgery (Otolaryngology) University of Chicago School of Medicine; Dr. Russell L. Cecil, Professor of Clinical Medicine, Cornell University Medical College; Dr. Roy Dr. McLure, Surgeon-in-Chief, Henry Ford Hospital, Detroit; Dr. N. W. Philpott, Department of Obstetrics and Gynæcology, McGill University. M. B. CAVERHILL

Nova Scotia

Noted in the King's Dominion Day Honours List was Dr. Lyall Cock of Halifax, Chief Medical Officer of the Department of Immigration, who was made Commander of the British Empire, Civil Division.

Dr. A. B. Campbell, until recently practicing in Bear River, has been appointed Chief Medical Officer of the Workmen's Compensation Board of Nova Scotia, succeeding Dr. O. G. Donovan. This will be highly popular with the medical profession generally, as Dr. Campbell is a friend to all, and thoroughly equipped for the position.

The Halifax Press prominently displayed and wrote leading articles on the shipment by air of 200 lb. of lobster to Banff, during the recent meeting of the Association. We congratulate Dr. J. G. Lynch of Sydney, on his enterprise in providing the Westerners with a taste of Cape Breton Hospitality, in return for those luscious steaks, always a source of delight to the visitor from the Maritimes.

Dr. J. B. Jewell, recently discharged from the services, is now associated in practice with Dr. J. V. Graham of Halifax. Dr. Jewell, is a graduate of McGill University, and was for a period on the Intern Staff of the Halifax Infirmary.

Dr. R. M. Benvie of Stellarton, was a patient recently in the Halifax Infirmary.

Dr. L. P. Churchill of Shelburne, really opened the new Roseway Hospital, by giving the first anæsthetic, reducing the first fracture, and delivering the first baby to be born in the institution.

Dr. L. deV. Chipman, of Saint John, N.B., has retired from the active practice of his profession, and will reside in future in Wolfville, N.S.

Dr. J. G. Cormier of Sydney attended the Association of French Physicians which met at the Chateau Frontenac, Quebec, in June. H. L. SCAMMELL

New Brunswick

Dr. H. R. Bryant who has practised on Grand Manan Island will shortly establish his practice in Sussex. Dr. Bryant is one of many doctors in Canada who remained in a difficult position during the war years, at the request of the Canadian Procurement and Assignment Board.

Dr. Walter J. Fisher of the staff of the Provincial Hospital at Fairville was made a fellow of the American Psychiatric Association at their one hundred and first meeting in Chicago.

Dr. J. E. Paulin of the N.B. Public Health Service recently opened a new Tuberculosis Centre at Chatham.

The doctors of the Medical Society of Campbellton recently asked the Provincial Government that a recently passed by-law be enforced, providing for the pasteurization of all milk sold in Campbellton. This action followed a request from the Minister of Labour that enforcement of the by-law be postponed until further discussion with interested groups be arranged.

At the Nurses' Graduation exercises of the Hotel Dieu Hospital at Campbellton, Dr. C. E. Dumont president of Hospital Staff announced many changes in the Hospital, especially the addition of much new equipment. He stated that shortly the hospital bed capacity would be considerably increased.

Dr. Percy J. Losier was the special speaker at the graduation exercises of the training school for nurses at the Hotel Dieu Hospital at Chatham.

Col. D. F. W. Porter presently D.M.O., M.D. No. 7, is slated for the position of Commandant at the Military Hospital at Ste. Anne de Bellevue, Que. Col. Porter's overseas military record has been distinguished and his many friends wish him success in this new appointment.

Dr. Austin Clark will shortly assume the position of Superintendent at River Glade Tuberculosis sanatorium succeeding Dr. Perry Knox who is moving to Moncton to be Superintendent in the new Tuberculosis centre established in the R.C.A.F. Hospital buildings.

Dr. R. J. Dolan who practised in South Nelson before the war is named as the officer in charge of the D.V.A. Tuberculosis Hospital now in course of preparation in the buildings of the war time military hospital at Camp Sussex.

Dr. J. C. Duffy of Chatham has been a visitor of various Saint John Hospitals, lately, doing refresher work in laboratory, clinical and surgical methods.

Dr. R. J. Collins, Superintendent of the Saint John Tuberculosis Hospital has enjoyed a long delayed holiday, and a good part of this holiday has been spent attending various conventions.

Dr. A. L. Donovan who has served for the duration of the war with No. 14 Field Ambulance (Reserve) has resigned as O.C. of the unit. His successor has not yet been announced.

Dr. G. E. Gauvin has assumed his new duties as Superintendent of the new Tuberculosis Hospital at Edmundston.

Dr. P. C. Laporte and Dr. A. M. Sormany of Edmundston have returned from a long holiday in the Latin Americas.

Friends in his native Province of New Brunswick regret to hear of the death of Dr. Bruce Malcolm, recently, in Chicago.

At the sixth annual meeting of the N.B. Society of Radiographers, the x-ray treatment speakers were Dr. J. A. S. Hynes of Fredericton and Dr. E. A. Petrie of St. Joseph's Hospital, Saint John and Dr. G. W. A. Keddy of the Surgical Staff of the Saint John General Hospital.

Dr. Chipman McKay has been appointed Departmental District Medical Officer for K District with headquarters at Saint John.

A. S. KIRKLAND

Ontario

The Board of Trustees of the Hospital for Sick Children, Toronto, desire to announce that excellent progress is being made in developing plans for the new Hospital. A sum of money in excess of 7½ million dollars was subscribed, indicating that the campaign was received by the people with an enthusiasm and a generosity which speaks well for the humanitarian instincts especially where little children are concerned.

Plans for the new building are taking shape. It is recognized of course that labour conditions and the securing of builders' supplies are such that the new hospital may not be ready as soon as had been anticipated.

The trustees further recognize that the finest physical structure that can be built only produces the workshop for the professional and ancillary staffs which constitute the heart and soul of the institution. On the advice of the Medical Advisory Board, the Trustees have decided to recognize a growing tendency in many parts of the world to provide a limited number of full-time personnel in addition to the part-time voluntary assistance given by the great majority of the medical profession. Accordingly, a comparatively small number of medical personnel will be appointed on a full-time basis. The senior appointees will be free to render consultative service to their confrères. The junior appointees will be fellows whose backgroung and previous training will have equipped them to render notable service to the Hospital under the guidance of the senior staff.

The Trustees are convinced that under the proposed medical organization all problems related to the care of the child, including the highly technical aspects of modern investigational procedures, will be implemented in a manner which will continue to improve the remarkable record which has been made in the past few decades in the treatment and prevention of disease.

Dr. G. S. Burton, graduate of Queen's in 1931 and neuro-psychiatric adviser to the Director of Medical Services at Canadian military headquarters overseas has joined the staff of the Homewood Sanitarium in Guelph.

Dr. John Magladery of New Liskeard has been appointed assistant professor of medicine in Johns Hopkins University, Baltimore, Md., Dr. Magladery graduated from the University of Toronto in 1936 and was a Rhodes scholar. He was in England at the outbreak of the war and joined the Royal Army Medical Corps. He was seconded to the R.A.F. with the rank of Major but reverted to Captain and went to North Africa with the 15th Canadian General Hospital.

Dr. William A. Scott has retired from his post as Professor of Gynæcology and Obstetrics in the University of Toronto and head of the department in Toronto General Hospital. Eulogies might well be written on the work done by Professor Scott during his occupancy of the chair. Dr. Scott will continue in private practice and will still serve as Main Board Examiner for the Medical Council of Canada.

Dr. H. B. Van Wyck has been appointed to succeed Dr. Scott as Professor of Gynæcology and Obstetrics. The appointment is enthusiastically approved by Dr. Van Wyck's colleagues in his department and in the Faculty of Medicine. Like his predecessor he is a man of wide culture as well as being a thorough scientist with a gift for teaching.

Dr. G. Douglas Taylor of Toronto addressed a meeting of the Brant County Medical Society on April 26, 1946. The meeting was well attended and the paper

on "Diagnosis and treatment of arthritis" was described as "an extremely satisfactory and interesting presentation of the subject".

Ontario had a goodly representation at the Canadian Medical Association meeting in Banff. The hospitality of their hosts in Alberta and British Columbia was unlimited in its generosity and will never be forgotten by those who enjoyed it.

The civic employees of the City of Toronto have formed a union and the Board of Control has made it mandatory that everyone on the payroll shall belong. The medical personnel seemed inclined to accept the order but the Ontario Medical Association took exception. Dr. Kelly, secretary of the association, made representations to the authorities which resulted in a modification of the mandate. The officers of the Legal Department also protested and the result is that both lawyers and doctors in the employ of the city have been exempted from the general order. A vicious precedent has died aborning.

M. H. V. CAMERON

Prince Edward Island

Dr. W. W. Tidmarsh, son of Dr. F. W. Tidmarsh, Charlottetown, has opened a practice at Crapaud, Prince Edward Island.

Dr. Lorne A. MacLean and Mrs. MacLean of North Wilbraham, Mass., were recent visitors to this province. Dr. MacLean's former home was at North Wiltshire, Prince Edward Island.

At the Prince Edward Island Hospital, June 8, 1946 to Dr. and Mrs. W. L. MacDonald, Charlottetown, a son.

Dr. W. B. Howatt, Summerside, has recently discontinued his general practice and is devoting his full time to the practice of radiology.

Dr. Wallace Graham of Toronto was the guest speaker at the dinner, sponsored by the Educational Committee of the Prince Edward Island Medical Society on the evening of June 18. Dr. Graham gave a very interesting and well illustrated lecture on the early diagnosis and treatment of arthritis.

Lieut.-Col. J. E. Andrew, M.D., Halifax, was among the doctors attending the Canadian Medical Association meeting at Banff; he exects to be transferred, shortly, to the Military Hospital in Toronto. Lieut.-Col. Andrew was formerly from West Royalty, Charlottetown.

Among those attending the recent Victory Meeting of the Canadian Medical Association held in the beautiful and picturesque setting at Banff, Alberta, were Dr. F. W. Tidmarsh, Charlottetown, Dr. A. J. Murchison, Secretary of the Prince Edward Island Division, and Dr. W. J. P. MacMillan, Provincial Representative, who was re-elected a member of the Executive Committee of the General Council of which he has been a member for the past eight years. Dr. MacMillan was also re-elected a grand councillor of the Cancer Society of which he was one of the original directors at the formation of the Society in 1938.

Dr. Harvey Doney, Toronto, National Director of Red Cross swimming and lifesaving, recently visited this Province under the auspices of the Prince Edward Island Red Cross Society. Dr. Doney spoke with regard to the program being carried out by the Red Cross, which is stressing "water safety". Dr. Doney's lectures were exceedingly well attended.

A. J. MURCHISON

Quebec

Postgraduate Clinical Course — Supervision in Obstretical Nursing.—A new postgraduate course in Supervision in Obstetrical Nursing has been established in McGill University. This course is being directed by the McGill School for Graduate Nurses, the clinical program being provided by the Royal Victoria Montreal Maternity Hospital and other approved institutions. The purpose of the course is to prepare Obstetrical Nursing Supervisors who will be qualified to administer and supervise the nursing service as well as to develop clinical educational programs. Applicants for this course must have at least six months of successful obstetrical nursing, and have shown their adaptability to this field. They must also meet the entrance requirements of the School for Graduate Nurses with regard to a satisfactory Junior Matriculation standing, health and professional preparation.

The course is a full university year and includes lectures and related clinical experience, conferences, demonstrations and special studies. The month of September is devoted to observation and supervised practice; from October to May inclusive, lectures in the University are correlated with a planned clinical program. It is concluded by two months of concentrated practice under supervision.

This course should meet a great need in a rapidly expanding field. As it is the intention to accept a small and very carefully selected group for the first year, beginning September 3, 1946, the co-operation of superintendents of nurses is invited in encouraging suitable candidates to apply.

Application forms and further information may be secured from the Director, School for Graduate Nurses, McGill University.

Les bureaux médicaux de la province de Québec, réunis en assemblée au Chateau Frontenac de Québec, ont jeté les bases d'une association des bureaux médicaux des hôpitaux du Québec. 52 délégués représentant 31 hôpitaux étaient présente. Cette association a été fondée dans le but de grouper les médecins des hôpitaux de la province, de soutenir et de défendre les intérêts des dits médecins et des bureaux médicaux et de former un organisme adéquat pour l'etude des problêmes concernant les services hospitaliers.

Les Religieuses Hospitalières de l'Hôtel-Dieu de Québec construiront, sous peu, sur le chemin St-Louis un vaste hôpital qui répondra à toutes les exigences modernes. Un nouvel hôpital sera également érigé dans le comté de Pontiac, au nord de Shawville. Cet hôpital aura 52 lits et coûtera environ $250,000.

Le Conseil National de Recherches vient d'annoncer à Ottawa l'attribution de 7 bourses post-scolaires. Les Drs Paul Dontigny et Jasques Léger de cette province sont au nombre de ces boursiers; leurs études se poursuivront à l'Institut de Médecine Expérimentale de l'Université de Montreal.

Le Dr A. Contero est l'un des récipiendaires d'une bourse pour continuer ses recherches en cancérologie.

Le Dr G. Brisebois, médecin, chimiste et bactériologiste vient d'être nommé président du bureau médical de l'hôpital Général de la Miséricorde de Montréal.

Le Dr Jacques Genest, ancien interne-en-chef de l'Hôtel-Dieu de Montréal, actuellement élève de l'hôpital Johns Hopkins de Baltimore, vient d'etre nommé "Associate Fellow" de l'American College of Physicians.

JEAN SAUCIER

Saskatchewan

Dr. Frederick D. Mott, B.A., M.D., C.M., L.M.C.C., a graduate of McGill College, Montreal, and one of the outstanding public health authorities in the United States, has been released by the surgeon general of the U.S. Public Health Service to become chairman of Saskatchewan's Health Services Planning Commission. He is the son of the world-famous Y.M.C.A. and missionary leader, Dr. John R. Mott.

Dr. Mott, will take over his duties from the acting chairman, Dr. C. G. Sheps on September 1 when the latter goes on leave of absence from the health department to take a special Rockefeller Foundation fellowship for advanced studies in social medicine and public health.

Dr. Mott will come from Washington, D.C., the headquarters of the U.S. Public Health Service, in which organization he carries the rank of senior surgeon. He is also chief medical officer in the Farm Security Administration of the U.S. Department of Agriculture, as well as national activity leader in the Rural Health and Sanitation division of the agriculture department.

General

Establishment of a Medical Research Division.—A Division of Medical Research has been established by the National Research Council of Canada to carry on work previously directed through the Associate Committee on Medical Research. Dr. J. B. Collip, Director of the Research Institute of Endocrinology, McGill University, Montreal, Chairman of the former Associate Committee, has been appointed Director of the Division. Dr. G. H. Ettinger, Professor of Physiology, Queen's University, Kingston, Honorary Secretary of the former Committee, has been appointed Assistant Director of the Division.

A new Committee on Medical Research has been established for the purpose of advising the Division of Medical Research on questions of policy and with respect to medical problems which should be investigated. Under the new organization of this work, the National Research Council will continue to support medical research mainly in the existing medical schools and hospitals throughout Canada, rather than through the establishment of medical research laboratories and appointment of medical research workers under its own auspices.

The general subject of medical research was sponsored by the National Research Council just before the war at the request of the Canadian Medical Association and the Royal College of Physicians and Surgeons. The first Chairman of the Committee was the late Sir Frederick Banting. Early in 1939 he conducted a survey of research facilities in medical schools and hospitals throughout Canada. He found that workers in Canadian laboratories were both eager and able to undertake medical research problems. The Associate Committee then began to receive suggestions for requirements in respect of medical research and related matters and to make awards of grants-in-aid of medical research in various centres throughout the Dominion according to a carefully prepared and comprehensive national plan.

On the outbreak of war the Associate Committee on Medical Research offered its services through the National Research Council to the Dominion Government in the co-ordination of wartime medical research. Visits were paid to Great Britain by Sir Frederick Banting in December 1939, by Prof. C. H. Best in 1940 and Prof. W. Penfield in 1941 to learn of needs in which Canadian investigators could help. By 1942 most of the budget and activities of the Associate Committee were concerned with war problems, a situation which continued throughout the war. Free exchange of reports and information with the allies prevented overlapping. Conferences to discuss many problems and progress in their solution were held and these were usually attended by large representation from the United States and frequently from Great Britain and other allied countries.

After the tragic death of Sir Frederick Banting in February 1941, Dr. J. B. Collip became Chairman of the Committee.

Immediately following the outbreak of war, there was a large influx of medical problems from the three Armed Services. In order to meet this situation, the National Research Council established a separate Medical Research Committee for each Service to deal with the medical problems peculiar to the individual Service, and also made necessary arrangements to ensure that there would be no unnecessary duplication of effort between these committees, and that each Service concerned would receive full benefit from work done by another committee on problems of common concern. These three Committees were discontinued at the close of the war.

Most of the war problems investigated by the Associate Committee on Medical Research were supervised by four subcommittees, all with members from the Services. The Subcommittee, on Shock and Blood Substitutes, with Dr. C. H. Best as Chairman, directed researches through Regional Groups in Toronto and Montreal on the fundamental nature of shock, on the use of isinglass as a blood substitute, on the preparation, properties, storage and transportation of dried human blood serum, and on methods of preservation of whole blood and red blood cells. It acted as adviser to the Connaught Laboratories, the Canadian Red Cross Society, and the Department of Pensions and National Health, in the matter of preparation of dried serum, and to the Royal Canadian Army Medical Corps in the preparation of a film demonstrating the recognition and treatment of shock. It issued memoranda on the "Early recognition and treatment of shock" and on the "Organization and operation of a blood bank".

The Subcommittee on Infections, Dr. Duncan Graham, Chairman, organized researches on the diagnosis and treatment of wounds infected with gas gangrene and other organisms, and pioneer experiments on the local application of sulfonamides. It supervised the production of typhus vaccine and Shiga toxoid, and made suitable recommendations to the Department of National Defence concerning their use. It instituted experiments on methods of production and use of penicillin. From its pilot plant in Toronto it supplied large quantities of penicillin to the Department of National Defence, and less amounts for civilians, until the commercial production in Canada was able to supply ordinary needs. It undertook preparation of an influenza vaccine. It prepared recommendations for prevention of infection of wounds. It advised the Department of National Defence on questions of bacteriological significance as often as requested.

The Subcommittee on Surgery, Dr. Wilder D. Penfield, Chairman, supervised researches through Regional Groups in Montreal, Toronto, London and Winnipeg, and through sections on Burns, Orthopædics, Plastic Surgery, Surgical Radiology, Thoracic Surgery, and Traumatic Injuries of the Nervous System. These included investigations on the treatment of burns; infected wounds and peripheral nerve injuries; treatment of low back pain with and without sciatica; use of penicillin; skin grafting; bone grafting; facial prostheses; recognition of non-metallic foreign bodies by x-ray; and surgical problems of air transport of wounded. The Subcommittee arranged important conferences in which surgeon-specialists, both in the Services and in civilian practice, in Canada and from abroad, were called together to consider these matters, and memoranda on certain special subjects were issued by the National Research Council.

The Subcommittee on Industrial Hygiene and Industrial Medicine, Dr. D. Y. Solandt, Chairman, was concerned mainly with health problems in industries active in the manufacture of munitions and supplies.

The Associate Committee also provided the Department of National Defence with recommendations in respect of nutrition and prepared a memorandum on problems of nutrition in Canada, which was submitted to the Ministry of Food, and the Medical Research Council, Great Britain.

In carrying out the foregoing program of medical research, the Associate Committee had the co-operation and assistance of several hundred leading physicians and surgeons, throughout Canada, who were keenly interested in this subject. Their able and willing contributions enabled the Committee to plan and direct medical research during the war on a high level of efficiency and it is not surprising therefore to find that the work has now been so well established as to warrant the creation of a permanent Division of Medical Research within the organization of the National Research Council. Under the new arrangement the existing need for expansion can be met and continuity of research from year to year in selected fields will be provided for on a permanent basis.

Canadian Physicians' Fine Art and Camera Salon.—Dr. Robert G. Riley of Calgary, Alberta, and Dr. F. J. Tees of Montreal have been declared winners of this year's Canadian Physicians' Fine Art and Camera Salon held at Banff, Alberta, in conjunction with the Annual Meeting of the Canadian Medical Association.

Their efforts—Dr. Riley's painting "At a Saskatchewan Crossing", and Dr. Tees' photograph, "Puppy's First Bath"—won first places in the Fine Art and Photographic sections of the Salon over a large number of exibits from doctors all across Canada.

The awards, made possible through the courtesy of the sponsors of the Salon, Frank W. Horner Limited, are bas-relief plaques of the head of Sir Frederick Banting, M.D., who was himself a noted artist.

Awards of Merit were also made in both the fine art and photographic sections. In the fine art section they were made to Dr. G. E. Tremble of Montreal, Dr. Harvey Agnew of Toronto, Dr. J. Robert Le Touzel of London, Dr. John Mann of Toronto, Dr. T. E. Brown of Lethbridge and Dr. André Simard of Quebec; and in the photographic section to Dr. L. J. Notkin of Montreal, Dr. F. J. Tees of Montreal, Dr. H. F. P. Grafton of Kamloops, Dr. W. K. Blair of Oshawa, Dr. Ronald Dupuis of Montreal and Dr. D. B. Stewart of Vita, Manitoba.

An association of the Samuel S. Fels Funds Medical Research Laboratory with the Temple University School of Medicine for research in Gastroenterology and Internal Medicine has been consummated. The Fels Research Laboratory will henceforth be known as the Fels Research Institute of Temple University School of Medicine, and will be located in the medical school laboratory building at Broad and Ontario Streets, in Philadelphia.

The American Congress of Physical Medicine.—Will hold its twenty-fourth annual scientific and clinical session September 4, 5, 6 and 7, inclusive, at the Hotel Pennsylvania in New York. Scientific and clinical sessions will be given each day. All sessions will be open to members of the medical profession in good standing with the American Medical Association. In addition to the scientific sessions, the annual instruction courses will be held September 4, 5, and 6. These courses will be open to physicians and to therapists registered with the American Registry of Physical Therapy Technicians. For information concerning the convention and the instruction course, address the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

The Alvarenga Prize.—In recognition of his studies upon chemotherapy in tuberculosis, the College of Physicians of Philadelphia is awarding on July 14, 1946, the Alvarenga Prize for this year to Doctor William H. Feldman, of the Mayo Foundation for Medical Education and Research. The Alvarenga Prize was established by the will of Pedro Francisco daCosta Alvarenga of Lisbon, Portugal, an Associate Fellow of the College of Physicians, "to be awarded annually by the College of Physicians on each anniversary of the death of the testator, July 14, 1883".

£74,000 Endowment of University Chair by Burroughs Wellcome & Co.—The University of London has accepted an offer from the trustees of the estate of the late Sir Henry Wellcome of a capital sum of £74,000 for the endowment of the Chair of Pharmacology tenable at the College of the Pharmaceutical Society and henceforth to be entitled the Wellcome Chair of Pharmacology. The income will be used to pay the salary of the holder of the chair, now occupied by Professor G. H. Buttle, and to contribute to the cost of the research work.

American College of Surgeons Postpones Clinical Congress in New York.—Owing to the shortage of hotel accommodations as a result of the holding of the United Nations Assembly in New York in September, the American College of Surgeons has decided to postpone its Clinical Congress which was to have been held at the Waldorf-Astoria September 9 to 13. The United Nations meeting was announced 90 days after arrangements had been completed to hold the Clinical Congress in New York, and acting upon authoritative advice the College at first proceeded with plans for its first annual meeting since November, 1941. Later developments, however, indicate that the attendance at the United Nations meeting, at first estimated officially to be around 3,000, may run between 6,000 to 8,000, which would make it impossible for the Congress, which at least 5,000 people want to attend, to be held during the same period.

The decision to postpone the Congress was made with especial reluctance because of the fact that efforts to arrange for a definite time later in the year in New York have not yet been successful. Negotiations are in progress and it is hoped that announcement can be made in the very near future. Because of the well advanced stage of the program for both the clinical and scientific sessions, and the superior facilities available in New York for the momentous event which the next Congress will be after so long a period without annual meetings, it is not considered desirable to move to another city unless absolutely necessary. Therefore, work on the program for operative and non-operative clinics in the New York and Brooklyn and other Long Island hospitals, and for scientific sessions and hospital conferences in the headquarters hotel, is proceeding.

U.S. ARMY NURSES TO BE INSTRUCTED IN PSYCHIATRIC NURSING.—That the post-war Army nurse will be given every opportunity to be a specialist in every branch of her profession is indicated by the Surgeon General's announcement that a program of instruction in psychiatric nursing would be established at the Brooke Medical Centre at Fort Sam Houston, Texas.

"The important part of the program", said Colonel Florence A. Blanchfield, Director of the Corps, "is that psychiatric nursing is to be made a part of the Army nurse's *basic* education. In time, it is hoped that every nurse who serves with the Army will have been given the opportunity to take the course, even though she does not remain in psychiatric hospitals. She will be a better nurse for having had the instruction."

BOOK REVIEWS

Modern Anæsthetic Practice. Edited by the late Sir Humphry Rolleston and A. Moncrieff. 2nd ed., 150 pp., illust. 12s. 6d. Published on behalf of *The Practitioner* by Eyre and Spottiswoode (Publishers) Ltd., Strand, W.C.2, 1946.

Twelve authors have contributed to this edition, giving coverage in a general way to the broad field of anæsthesia, including the use of volatile anæsthetics, nitrous oxide, spinal, local endotracheal and intravenous anæsthesia, and the application of these methods to general and pædiatric surgery, dentistry and obstetrics. Many may take exception to the methods described for the administration of nitrous oxide, particularly the use of "secondary saturation" a technique which is rapidly falling into disrepute in many teaching centres and which is certainly not to be entrusted to the hands of the "occasional anæsthetist". The book is of limited value to the anæsthesiologist, but for the general practitioner who is occasionally called upon to administer anæsthetics, it gives a fairly comprehensive and concise review of the field of anæsthesia which he can use as a background for further reading in this specialty.

Psychological Medicine. D. Curran, Psychiatrist and Lecturer in Psychological Medicine, St. George's Hospital, London, and E. Guttmann, Neuropsychiatric Specialist, Emergency Medical Service, London. 2nd ed., 246 pp., illust. $3.00. E. & S. Livingstone, Ltd., Edinburgh; Macmillan Company of Canada Limited, Toronto, 1945.

The second edition of this short introduction to psychiatry maintains the excellent standard already set by the authors. These two British authorities have deliberately limited their field to clinical conditions of mental disorder. A preliminary chapter on the etiology of mental illness lays stress on the multiple factors, psychological, physical and constitutional, which play their respective rôles in precipitating illness of this type. A further early chapter serves to orientate the student in the symptomatology and pathology both psychological and anatomical, of psychiatric conditions, without becoming obscure in polemical discussion of subtle psychological considerations. The book reflects the modern position that prefers to speak of "syndromes" and "reactions" rather than of "disease entities". The physical aspect of these conditions is given due emphasis. A concise chapter on the psychiatric aspects of head injury is useful in connection with this psychosomatic approach. The appendix on military psychiatry is of current interest as bringing the contribution of this branch of medicine into relation with civilian practice. The discussion of therapy is necessarily limited, but reveals in outline the best modern approach. Of particular value is the distinction drawn between minor and major psychotherapy and the indications for each. By major psychotherapy the authors mean the psychoanalytic technique, in its full application. The authors' terminology is well within the scope of the average medical student; and the book may be commended for its clarity of exposition and sound common sense.

Principles of Dynamic Psychiatry. J. H. Masserman, Division of Psychiatry, Department of Medicine, University of Chicago. 322 pp., illust. $4.60. The W. B. Saunders Company, Philadelphia and London; McAinsh & Company Limited, Toronto, 1946.

Of the making of schools of psychiatry there appears to be no end. In a lifetime there have appeared, among others, Kraepelinian nosology, Freudian psychoanalysis, Meyer's psychobiology and now Masserman's "biodynamics". To be sure, the last-named is a far-reaching attempt to integrate psychoanalysis with biology and to realign dynamic psychology with physiology. The author seeks nothing less than the principles on which to establish a "biodynamic organon of behaviour" to hold "from amœba to man". The key to this ambitious project is to be found in the concept of adaptation. The organism reacts to stress or conflictful situations according to its psychobiological needs. This reaction is a total one, the organism responding in the holistic manner. All behaviour is thus adaptative and human neuroses and psychoses take their places as defence reactions to environmental or "interpreted" stress. The author illustrates his thesis with a wealth of example drawn from clinical and experimental work.

It is difficult to avoid the criticism, however, that the author's experimental basis is limited to work in mammalian physiology on conditioning neuroses. Moreover, this attempt at integration in terms of the lowest common denominator of behaviour will not satisfy those other students of human nature who seek in their respective syntheses some account of such diverse factors as scientific curiousity, poetic imagination, moral integrity and straightforward courage, to name but a few of the factors which determine human behaviour. Finally, the average medical practitioner will be somewhat puzzled by the extension of psychiatry from a medical specialty to "the science of human behaviour", together with the author's frank denial of history as he discusses "the misleading derivation of the term psychiatry from Greek roots meaning 'mind-healing' ". As an example of a trend in American psychiatry this book is of interest. The glossary of psychiatric terms is a useful and necessary appendix to a book heavily weighted with a polysyllabic display of linguistic erudition.

Pulmonary Œdema and Inflammation. C. K. Drinker, Professor of Physiology, School of Public Health, Harvard University. 106 pp., illust. $2.50. Harvard University Press, Cambridge, 1945.

The lymphatic drainage of the lung is reviewed. It is emphasized that the lymphatics do not surround the alveoli but end just short of the atria. Before excess fluid reaches the lymphatics, for drainage back to the blood stream, the alveolar septæ become turgescent with œdema fluid. This thickening of the septa, together with fluid lining the walls within the alveoli, interferes with the normal exchange of gases. If, in addition, the proteinize fluid in the alveolus in drifting upwards blocks the bronchiole, an added cause for anoxia obtains with resulting increased permeability of capillaries and increased transudation.

In the chapter on "Breathing movements and œdema", the massaging effect of deep breathing on lymph vessels is observed and discussed, and also effects of shallow breathing. Regarding the latter the author states: "In the lungs of a patient lying motionless on his back, shallow breathing means extinction of air entrance into many lobules".

Position as a cause of blood stasis, atelectasis and pulmonary œdema is also discussed. Experiments were carried out on an anæsthetized dog in which respiratory movements were restricted. After five hours 22 c.c. suspension of finely divided graphite in 6% acacia-physiological saline was injected into the jugular vein. One minute after completion of the injection the dog was bled to death and the lung examined. A large amount of graphite was detected in the normal upper part of the lungs where circulation and ventilation were normal. There was absence of the graphite in the conjested and dependent portion.

This experiment emphasizes the necessity for a change of position. Under therapy, early use of 100% oxygen as prevention of anoxia and pulmonary œdema is emphasized. He points out that a 100% oxygen can be used if short intervals of discontinuance for feeding and drinking, etc., would be allowed. Also the efficacy during operations of using, for short periods, 10% carbon dioxide with 90% oxygen to stimulate deep breathing as a means of prevention of bronchiolar blocking, is stressed. In the last chapter, artificial respiration is discussed. The author condemns mechanical resuscitators and recommends the following: mouth to mouth breathing; Shafer's method

and occasionally Sylvester's method; the rocking resuscitators. For prolonged artificial respiration the Drinker-Shaw respirator is considered the one of choice.

Science and Scientists in the Netherlands Indies. Edited by P. Honig, Member of the Board for the Netherlands Indies, Surinam and Curaçao, and F. Verdoorn, Botanical Adviser to the Board for the Netherlands Indies, Surinam and Curaçao. 491 pp., illust. $4.00 (£1. 1. 0). Published by the Board for the Netherlands Indies, Surinam and Curaçao, New York, 1945.

This volume is published by the government of the Netherlands Indies through its Board established in the United States in 1942 and is the record of one of the many activities carried out by this government in exile. It sets out in detail the founding and development of both basic and applied sciences in the Netherlands Indies. It thus embraces history, geography and scientific exposition, dealing with a part of the world the importance of which in the world economy was only realized when it was temporarily lost under the Japanese occupation.

The volume is a most valuable reference book for those interested in science and trade and a unique source of information for anyone about to visit the Malayian archipelago. For medical readers the most interesting section of the book will be that which deals with the production of cinchona. There are also chapters dealing with medical contributions in the field of various tropical diseases, research in beriberi and rabies and prehistoric investigation. The whole is an impressive demonstration of the extent to which the natural sciences enter into the cultural and material development of a country. As one would expect the volume has an excellent equipment of maps, diagrams and supplementary tables and illustrations. The format shows what can be done in the way of book production when the necessary materials are available.

Sulfonamides in Theory and Practice. J. S. Lawrence, Physician, Haymeads Emergency Hospital, Bishop's Stortford. 125 pp. 9s. H. K. Lewis & Co. Ltd., London, 1946.

This small book, which can be read easily in one evening, is ideally suited to the needs of the busy general practitioner, but will also be of value to any clinician who is interested in the use of sulfonamides. It is not an exhaustive review, of the type which could be used as a key to the vast literature on the subject, but is rather a condensed summary of the information which the author considers to be required for the intelligent use of these compounds.

The subjects covered include the history of the development of the sulfonamides, their mode of action, relative potency and pharmacology, the susceptibility of various organisms to these agents, the clinical use of sulfonamides in both medical and surgical diseases, toxic effects, and laboratory tests used in conjunction with sulfonamide therapy. The last subject is treated very briefly and the book is obviously not intended to be used by laboratory workers as a source of detailed information concerning a variety of techniques.

The book is published in attractive form and is free from all but minor errors, such as the incorrect formula of sulfadiazine on page 19 and the statement on page 14 that acute hæmolytic anæmia is peculiar to sulfanilamide intoxication and is not encountered with other sulfonamides.

Venous Pulse and its Graphic Recording. F. M. Groedel, Attending Cardiologist, Beth David Hospital, New York. 223 pp., illust. $5.50. Brooklyn Medical Press, New York, 1946.

This monograph is concerned mainly with the technical methods of recording the venous pulse in the neck and the interpretation of these phlebograms. Incidental to a thorough approach to his subject the author has supplied his readers with extensive historical and bibliographic references concerned both with technical recording methods of the venous pulse and the changing physiological conceptions regarding the return flow to the heart. There is a considerable discussion on the interpretation of the phlebogram in health and disease, and many records are reproduced.

In an attempt to elucidate the interpretation of the phlebograms, the author records his experience with the pneumo-cardiogram and the œsophago-cardiogram. The former is a record of changing air-flow in the trachea dependent upon the movements of the heart and the latter is a record of air changes in the œsophagus. These indirect methods of recording changes in the heart cycle show nearly identical tracings when compared with the phlebogram. All three methods of recording reflect, the author states "first of all the mechanical events taking place in the heart . . ., and secondly the intra-thoracic pressure changes due to systole and diastole of the various heart chambers, and due to outflow and inflow of the blood in the thorax."

Because of its technical nature this volume will be of interest mainly to those with particular interest in the study of the physiology of the circulation and of diseases of the cardio-vascular system. The author advocates a closer study and routine recording of the venous pulse in pathological cardiac conditions. "Phlebography", he concludes, "is at least one of the most valuable methods for research and the only clinical method to produce a graphic record of the beginning and ending of nearly every important phase and event during the cardiac cycle."

Medical Jurisprudence and Toxicology. J. Glaister, Regius Professor of Forensic Medicine, University of Glasgow. 8th ed., 691 pp., illust. $9.00. E. & S. Livingstone Ltd., Edinburgh; Macmillan Co. of Canada Ltd., Toronto, 1945.

Having reached its eighth edition, and having been a standard work on the subject for 43 years, this textbook needs no introduction. The attractiveness of this edition is further enhanced by its numerous illustrations, many of which are in colour.

In the section on Jurisprudence, the new subject-matter includes, *inter alia*, M and N factors and the Rh factor in blood; agglutinogens in saliva; and a suggested classification of death, instead of the medico-legal division into three pathological entities—coma, syncope and asphyxia—which leaves much to be desired in the light of present-day knowledge. In the section on Toxicology are included in the new matter chlorinated naphthalene, ethylene glycol, the new sulfonamides, tricresyl phosphate and triphenyl phosphate.

In the chapter on identification of human remains, there are six pages on the Ruxton case, which, for a long time to come, will probably remain the classic in identification of mutilated and dismembered human bodies.

In the section on alcoholic intoxication, contrary to the general trend on this continent, though assigning to the laboratory methods great value, the author points out that "the clinical examination must still remain the determining factor in arriving at a final diagnosis". With this, the reviewer is in complete agreement. Here, also, the author has selected from the many procedures available a relatively simple method (Kozelka and Hine) for quantitative estimations of alcohol in blood and urine for ordinary purposes, and the more elaborate, but highly specific, method of Gettler and Seidell, where it is essential for medico-legal purposes, to isolate the alcohol from body fluids and tissues as pure alcohol.

In the appendix there are useful data, including weights of organs of adults and the new-born child. The book is very well indexed. To say that this book is highly recommended to physicians and medical students is merely to repeat that which has been said of all of the previous editions upon which the reviewer has been asked to comment.

Physiological Basis of Medical Practice. C. H. Best, Professor and Head of Department of Physiology, University of Toronto, and N. B. Taylor, Professor of Physiology, University of Toronto. 4th ed., 1169 pp., illust. $10.00. The Williams & Wilkins Co., Baltimore, 1945.

The fourth edition of this widely read textbook has taken on a new form. The present volume has been greatly improved by its arrangement in a double column format on a larger page thereby reducing the awkward proportions of the previous editions.

Only one section has been extensively rewritten, that by Dr. Wynne entitled "Intracellular oxidation and the biological transformation of energy". However, scattered throughout the volume are brief additions including material on such topics as Rh factor, renin, ventricular fibrillation, ballistocardiographic and right heart catheterization methods for determining cardiac output, blast injury, anaphylaxis, inulin clearance, pain in duodenal ulcer, urea metabolism, thiamine, thyroxin secretion, pain, nature of retinal processes.

It is of interest that this text has now weathered 4 editions and fourteen printings since its appearance in 1937 and has been printed in Portuguese and Spanish editions.

Prescribing Occupational Therapy. W. R. Dunton, Jr. 2nd., 149 pp. $3.00. Charles C. Thomas Publishing Co., Springfield, Ill.; Ryerson Press, Toronto, 1945.

This is a second edition of a book published in 1928. Certain deletions and alterations have been made and a chapter on Rehabilitation added. Although occupational therapy has been practised for a long time and courses of training for aides, as the practitioners are called in Canada, are given in the University of Toronto, this method of treatment is not so widely known as it might be. Intelligent prescribing in this field is probably a skill possessed by only a few physicians or surgeons. The book gives a brief account of the principles and scope of the work and stresses the fact that handicraft is only a part of the method. At the present time occupational therapy is most largely used in psychiatric hospitals but many large general hospitals have departments in which the system is used both in outpatient and inpatient wards.

Patients undergoing long convalescence and requiring long rest periods are rescued from boredom or pathological flight to fantasy by being given occupation within their capacities, mental and physical, directed by carefully trained aides.

This is a book that may awaken interest in the subject and lead to a wider study of the possibilities of this adjunct to medical treatment. For those who wish to pursue the subject, an extensive bibliography is to be found at the end of each chapter.

Dr. W. C. Röntgen. O. Glasser, Cleveland Clinic Foundation. 169 pp., illust. $6.00. Charles C. Thomas, Springfield, Illinois; The Ryerson Press, Toronto, 1945.

This book happily commemorates the centenary of the birth of Wilhelm Röntgen and his discovery fifty years later on November 8, 1895 of the rays which now bear his name. The volume is sponsored by the three senior radiological societies of North America and in format and content is worthy of its mission.

Dr. Glasser who has already written the definitive biography of Röntgen presents a most readable account of the life of the unassuming, hard-working professor whose discovery thrust him into the uncongenial light of world fame. The greater part of the book is devoted to the circumstances of the discovery and the early history of the roentgen rays. But the quiet figure of Röntgen is well sketched—the central honesty of the man, his absorption in his work and his happy family life, the humility and greatness of mind with which he stood the acid-test of fame, and finally the sadness which the war brought him, the consequences of which he predicted.

The volume includes a new translation of the three classic papers on *A New Kind of Rays*, which in their brevity and clarity worthily bear the name of classics. The illustrations are taken from Röntgen museums in Germany. A list of Röntgen's scientific writings, a detailed chronology of his life and a bibliography complete the book. The volume as a whole maintains the high standards which we have come to expect from the publishing house of Thomas.

Textbook of Public Health. W. M. Frazer and C. O. Stallybrass. 11th ed., 571 pp., illust. $7.50 (Gr. Bt. 25s). E. & S. Livingstone Ltd., Edinburgh; Macmillan Company, Toronto, 1946.

It is not fair to measure this work by peace time standards. The authors worked amid such dangers and had so many obstacles to overcome in obtaining the necessary material that a reviewer should not be too censorious. While it is possible to show that the proofreading has been hasty, that the writing is sometimes vague and that the mathematical calculations are not always correct, these faults lose their importance when judged in relation to the difficulties in which the book was produced.

The frontiers of specialists in medicine are not easily found with exactness but a gross over-stepping of them can be recognized and some avoidable defects in this book result from excursions into subjects more authoritatively written about by clinicians. The parts which have to do with problems unquestionably in the domain of Public Health are well done and in detailed information reach the limits allowed by a work primarily designed for a student's textbook. The pruning and paring have been done judiciously and firmly; there is little repetition and no prolixity. Since sanitary regulations have at times only a regional or a national application, the rules and procedures set forth do not always correspond with those of the Federal or Provincial Governments of Canada. However, because of the amount of information it contains and the general sanity of the views of the authors, the book can safely be placed high on the list when a choice of textbooks in Public Health is offered to the Canadian medical student.

Essentials of Clinical Allergy. S. J. Taub, Professor of Medicine, Cook County Graduate School of Medicine. 198 pp., illust. $3.25. The Williams & Wilkins Company, Baltimore, 1945.

This is the best little book on Allergy this reviewer has seen. The author properly stresses the necessity for the allergist first to be a good internist. Immunological concepts, physiology and anatomy of allergy are dealt with briefly in early chapters. Seasonal and perennial hay fever are given two chapters. Notes on geographical distribution of pollens do not include Canada. Some interesting and practical details not generally appreciated are included in discussion of hay fever. Perennial treatment is favoured. Good detail of treatment in difficult cases is provided and useful notes on different ways in which some antigens are encountered. The symptomatic treatment of asthma is briefly but comprehensively outlined. There is a useful chapter on moulds as allergens and the seasonal incidence of mould allergies is indicated as late July and early August.

The discussion of skin allergies includes contact dermatitis and useful information on various substances used in various occupations. Drug allergies are also covered. Short chapters deal respectively with allergy of gastro-intestinal tract and of eye, migraine and allergic headaches, allergic arthritis, allergies of genito-urinary tract and of cardiovascular system, physical and bacterial allergy and periarteritis nodosa, serum sickness and the prophylactic injection of foreign sera. Methods of preparing extracts are described, and one chapter is devoted to instructions to patients on the avoidance of exposure to house dust, feathers, orris root, cottonseed, and pyrethrum. In the last chapter special diets and recipes are offered.

The author covers a great deal of ground in little space. His style is necessarily concise but he makes his points plain. His brevity is a great merit in this book, but statistical studies of results obtained by the methods advised would have been helpful. He is conservative in debatable matters. This book can be highly recommended to general practitioners and internists, and to undergraduates.

Cosmetics and Dermatitis. L. Schwartz, Medical Director, U.S. Public Health Service and S. M. Peck, Medical Director (R) U.S. Public Health Service. 189 pp., illust. $4.00. Paul B. Hoeber, New York, 1946.

The value of monographs on various aspects of dermatology is well borne out by this work. Each chapter is complete in itself and contains the literature on the subject, the constituents and method of manufacture of the preparation and finally the ingredients most likely to induce either a primary or allergic reaction. The first four chapters are devoted to the anatomy of the skin, history and method of action of local applications. Separate chapters are devoted to the various classes of cosmetics, creams, dentifrices, deodorants, soaps, etc. A chapter is devoted to the treatment of cosmetic dermatitis and one on the beneficial value of these preparations. Two chapters are devoted to the diagnosis of cosmetic dermatitis and methods of testing of new preparations. Much information is contained in the last two chapters on advertising and on certified cosmetic colours.

Because of the mass of information on a subject of such importance, presented in an easily readable form, the reviewer recommends this book highly to the dermatologist as well as the general practitioner.

Psychoanalytic Therapy. F. Alexander and T. M. French. 353 pp. $5.00. The Ronald Press Company, New York, 1946.

The staff of the Chicago Institute for Psychoanalysis plead a case for methods of psychotherapy shorter than the orthodox prolonged intensive technique of daily interviews for months or years. They have explored this possibility and report their conclusions with some case records. Satisfactory therapeutic results followed short treatments of from 1 to 67 interviews by trained psychoanalysts. The problems were interpreted in psychoanalytic concepts but no necessity was felt to reconstitute the personality or to explore the infantile nucleus. The transference situation and insight were controlled. The therapist might take a positive rôle and openly attempt to influence the patient. Environmental factors were altered. They urge a psychoanalytic formulation and carefully planned treatment. The technique is flexible in contrast to the conventional rigid procedure and may include supportive as well as uncovering procedures.

The book presumes a familiarity with psychoanalytic concepts but its language is simple. It should interest all physicians who know by experience that many patients are greatly benefited and satisfactorily helped by a few interviews and a sound management of the case. The orthodox method of psychoanalysis has always been too long and expensive to be widely applied. The bulk of neuroses and emotional problems must be managed by short methods and by the family physician. Whether psychoanalysis can contribute to this great practical need will depend on case experience of which this book can only be a preliminary report.

Rare Diseases and Some Debatable Subjects. F. P. Weber, Physician to the German Hospital, London. 174 pp., illust. 15/-. Staples Press Limited, London, 1946.

It is not infrequently said that what medical men want to hear about at medical meetings are not rare and obscure cases but the more ordinary every day types of disease which they must frequently deal with. Probably it is the reverse which is true. One would not choose only rare cases for teaching students, but to the general practitioner variety always has its fascination. We are reminded that Pasteur said that more could be learned from investigating rare, exceptional cases than from ordinary "typical" ones. Dr. Parkes Weber points out also that as time goes on more and more so-called syndromes become defined as certain diseases: the age of malaria, for instance before the plasmodium was discovered, was a syndrome which included cholangitis, endocarditis and so on. The same comment might be made about typhoid fever and tuberculosis.

Dr. Parkes Weber's collection is certainly unusual enough, beginning with a group that includes the Sturge-Kalischer disease, the Ehler-Danlos syndrome, Sjögren's syndrome and an "unknown disease". This is only the beginning of a long list of cases of great interest. The book concludes with a few miscellaneous comments on such subjects as "Euthanasia and the Medical Profession", "Explanation of the Urge to Collect" and, to close, some epigrams. Entertainment and instruction are well mixed in this volume.

Traumatic Deformities and Disabilities of the Upper Extremity. A. Steindler, Professor and Head of the Department of Orthopædic Surgery, The State University of Iowa, in collaboration with J. L. Marxer, Associate, Orthopædic Department, The State University of Iowa. 515 pp., illust. $10.00. C. C. Thomas, Publisher, Springfield, Illinois, 1946.

In the treatment of traumatic disabilities of the upper extremity, there are two objects, (1) the restoration of form, and (2) the restoration of function. The restoration of form does not necessarily mean that function will be restored. Varying influences are at work during healing, and these are not all favourable.

In the book, disabilities are grouped on a functional basis rather than anatomical. The general principles of deformity of the upper extremity are first discussed and later definite treatment of particular defects described. The mechanism of muscle changes and its influence on function is presented. Each operation on the upper extremity is regarded from the point of view of its functional needs, and the relationship of these to the whole arm. Shoulder cuff disabilities are well described, as well as general principles of treatment involving the elbow. Ischæmic contractures are described as to cause and prevention, as well as to physiology of the hand muscles and tendons.

The book builds up an authentic foundation for an important thesis on the surgery of the upper arm. In consideration of general muscle function, the author seems given to undue reliance upon physics, and is not likely to appeal to the average practitioner dealing with disabilities in this region. The writer also emphasizes the fact that most of the orthopædic surgeon's work is due to lack of knowledge of the principles of surgery on the part of the practitioner who first saw the case.

The book contains several hundred case histories, excellently illustrated by photographs and diagrams, all of which goes to make up a very comprehensive presentation of the traumatic surgery of the upper extremity.

Amputation Prosthesis. A. Thomas, Associate Professor of Surgery (Orthopædics), University of Colorado School of Medicine, and C. C. Haddan, President of the Association of Limb Manufacturers of America. 305 pp., illust. $10.00. J. B. Lippincott, Montreal, 1945.

The authors describe the types of artificial limbs that are best adapted to the various amputations. The importance of anatomic and physiological principles is related to each amputation and to each prosthesis. It is a volume which will be of great interest to surgeons connected with the mutilating injuries of the past war.

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Preventive Medicine and Public Health. W. G. Smillie, Professor of Public Health and Preventive Medicine, Cornell University Medical College, New York. 607 pp. $6.00. The Macmillan Company, New York, 1946.

One of the main purposes of this book is to set forth the changed and changing relations between private practice and community health. To accomplish this purpose the author does not resort to propaganda on behalf of the specialist in Public Health but relies on straightforward statement of facts to show that preventive medicine has become an integral part of clinical practice and that the conscientious practitioner can no longer dispose of his problems in sanitation by turning them over to the Medical Officer of Health or by ignoring them. Those who are beginning medical practice will find the work invaluable as a guide and as a readily accessible source of information. The older practitioners should read it to learn of the increased importance of Public Health since their student days: they may be astonished that so much is now required of them by specific legislation.

Few recently published medical works have so many features for which they can be commended. The arrangement is good, the style is clear and succinct, the subject matter is interesting, at times even intriguing. Perhaps the most notable quality is the general sanity and balance shown by Professor Smillie in matters which are primarily clinical. His attitude towards vitamins, nutrition and chemotherapy is respectful but not blindly enthusiastic and in assessing the claims made for psychiatric therapy he shows an admirable restraint.

The merits of the book are so numerous that it may be unreasonable to grumble because the section on population is inferior to the other sections. This inferiority results mainly from the author's failure to give due consideration and value to the opinions and conclusions of theologians, philosophers and economists who know at least as much about the teleological aspects of the question as do the members of the medical profession. Future editions will be improved by restricting the contents of this section to a simple recital of reliable statistics or by omitting it altogether.

Shock Treatments and Other Somatic Procedures in Psychiatry. L. B. Kalinowsky, M.D., Research Associate in Psychiatry, College of Physicians and Surgeons, Columbia University and Paul H. Hoch, M.D., Assistant Clinical Psychiatrist, New York State Psychiatric Institute and Hospital. 294 pp. $4.50. Grune & Stratton, Inc., 443 Fourth Avenue, New York, N.Y.

The authors of this book are recognized as experts in the field of shock therapy of the psychosis. Consequently, one would expect the book to be a reasonably complete and reliable exposition of the subject. The difficulties inherent in producing such a text, dealing with recently developed methods of treatment that are widely used with infinite possibilities for variations in technique, are great. However, the authors have succeeded in producing an interesting introduction to this field of therapeutics which will also serve as an excellent reference to those using shock therapies. The subject will be of interest to general practitioners since the "shock therapies" themselves introduced entirely new principals into medical treatment.

It is correctly stated in the book that one cannot learn to administer these treatments from a book. However, this is the only text which adequately covers the necessary variations in technique needed in dealing with individual cases. Chapter one deals with the historical background, while chapters two, three and four consider insulin shock, convulsive therapy and combinations of these. Chapter five briefly covers a group of subjects not always to be associated with shock therapies, namely, pharmaco-therapeutic attempts, continuous sleep therapy, fever therapy, nitrogen inhalation, vascular shock methods, Faradic shock, refrigeration and electric narcosis techniques. Chapter six deals with prefrontal lobotomy and chapter seven concludes with a number of interesting theoretical considerations. The index of authors and subjects at the end of the book is well selected and adequate.

There are certain features that detract from the value of the book as a whole. The very complete consideration of insulin shock therapies suffers from an inadequate coverage of the *modifications of insulin treatment* that have such value and that offer definite opportunities for treatment in the home and general hospital. There is also a distinct tendency to stress the treatment of schizophrenia so that in reading the section on fever therapy for example, a student might easily overlook the real significance, indications for and success of fever therapy. The use of curare, although not in itself a shock therapy, deserves a little more and less critical space in view of its great value in specific cases and its potentialities in other branches of medicine.

Clinical Laboratory Diagnosis. S. A. Levinson, Professor of Pathology, University of Illinois College of Medicine and R. P. McFate, Assistant Professor of Pathology, University of Illinois College of Medicine. 3rd ed., 971 pp., illust. $11.50. Lea & Febiger, Philadelphia; Macmillan Company of Canada, Toronto, 1946.

Four years have gone by since the second edition of this work appeared and in that time there have been enough changes in clinical views and laboratory methods to justify a third edition. A general revision has been carried out and special attention given to making clear the present state of our knowledge about such matters as the antibiotics, the sulfa compounds and the Rh factor.

The most useful part of this edition is the chapter on Tropical Medicine. The return of the forces from equatorial zones of combat has made tropical infections relatively common and the general practitioner must keep them in mind when he meets cases showing a bizarre form of pyrexia or a lesion of unusual site or contour. As an aid in the management of such patients he will find this chapter as helpful as anything which has thus far appeared.

The conscientiousness of the efforts made by the author to have the book accurate and comprehensive can be readily admitted and even admired. Yet it is difficult to like the book. It is difficult also to give a satisfactory reason for this lack of liking but there is a stodginess in the writing and a dreariness in the arrangement which will probably cause many readers to lay the book aside with a feeling of relief. However, those who seek in scientific writings only reliable information will find the purchase of this book a worth-while investment.

Bacterial Cell in Its Relation to Problems of Virulence, Immunity and Chemotherapy. R. J. Dubos, Professor of Comparative Pathology and Professor of Tropical Medicine, Schools of Medicine and Public Health, Harvard University. 460 pp., illust. $5.00. Harvard University Press, Cambridge, 1945.

This eminent authority has collected in one short volume a mass of data on the cytology and physiochemical properties of bacteria. From his consideration of the enzymatic reactions he predicts that "either used singly or in combination with other procedures enzymes will come to play an important part in the analysis of biological problems in general", a statement which presents this book as profitable study by the general biologist as well as in the more limited fields of bacteriology and biological chemistry.

Of particular interest to the bacteriologist is the attempt to remove from the realm of empiricism such universal and practically useful procedures as the Gram stain and acid fast stain, by an exhaustive discussion of the fundamental differences in cellular structure which

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these stains indicate. To the practitioner interested in keeping abreast in advances and rationales the most informative chapters are those dealing with the nature of bacterial virulence, the immune reactions of the host and the bacteriostatic and bactericidal agents, including chemotherapeutic agents particularly the antibiotics (penicillin). The general introduction to this subject includes a definition of the properties which seem characteristic of any living cell, any of which may be acted upon by the antibiotic to disturb the functioning of the living cell. The view is emerging that effective chemotherapeutic agents like the sulfonamides and penicillin probably affect the way in which the susceptible cell uses energy rather than the processes by which energy is liberated. It may come as a surprise to learn that penicillin for instance does not affect the respiration of staphylococci. Most chemotherapeutic agents have a selective effect on some specific metabolic steps. In the case of the sulfonamides it is known that their action is inhibited by high concentrations of para aminobenzoic acid, a substance which is considered an essential metabolite for susceptible bacteria.

As indicated above the book has a wider appeal than to the bacteriologist alone but is of importance to the general biologist and to the student of human medicine who will enjoy the appropriate quotations at the head of each chapter; for example "I'll tell thee everything I can, there's little to relate" (Lewis Carroll) subtitles the chapter on Physiochemical and Staining Properties of Bacteria.

BOOKS RECEIVED

Anatomy and Physiology for Nurses. J. L. Hamilton-Paterson, Pathologist to Redhill County Hospital. 174 pp., illust. 9s. H. K. Lewis & Co. Ltd., London, 1946.

Clinics. Volume IV, No. 4. Edited by G. M. Piersol, Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia, Pa. 199 pp., illust. $2.00. J. B. Lippincott Co., Philadelphia, December, 1945.

Gelatin in Nutrition and Medicine. N. R. Gotthoffer, Director of Research, Grayslake Gelatin Co., Grayslake, Illinois. 162 pp. Published by Grayslake Gelatin Co., 1945.

Handbook of Elementary Anatomy and Physiology. A. D. Belilios, Honorary Physician, Wimbledon Hospital; D. K. Mulvany, Acting Assistant Surgeon, Hospital of St. John and St. Elizabeth and the Victoria Hospital for Children, Chelsea, and K. F. Armstrong, Editor, *Nursing Times.* 186 pp., illust. $1.35. Baillière, Tindall & Cox, London; Macmillan Co., Toronto, 1945.

Handbook of Infectious Diseases. The staff of the Cantacuzène Institute, under the direction of Professor C. Ionescu-Mihaesti and M. Ciuca. 331 pp. League of Nations, Geneva, 1945.

Health Care of the Family. R. L. Todd, Assistant Professor in the School of Public Health, University of Minnesota, and R. B. Freeman, Associate Professor and Director of the Course in Public Health Nursing in the School of Public Health, University of Minnesota. 530 pp., illust. $3.50. W. B. Saunders Co., Philadelphia and London; McAinsh & Co. Ltd., Toronto, 1946.

Irish Medical Directory and Hospital Year-Book, 1945. 8th ed., 296 pp. 10/6. Parkside Press Ltd., Dublin, 1945.

Journal of the History of Medicine and Allied Sciences. Vol. I, No. 1. Edited by G. Rosen, *et al.* 182 pp., illust. Subscription rates: $7.50 in the U.S., Canada and Latin America; $8.50 elsewhere; single copies, $2.50. Published quarterly by Henry Schuman, New York, January, 1946.

Nursing and Nursing Education. A. Gelinas, Professor of Nursing and Chairman of the Skidmore College Department of Nursing, New York Post-Graduate Medical School and Hospital. 72 pp. $3.00. The Commonwealth Fund, New York, 1946.

Nursing in Commerce and Industry. B. J. McGrath for the National Organization for Public Health Nursing. 356 pp., illust. $3.00. The Commonwealth Fund, New York, 1946.

Symptomatic Diagnosis and Treatment of Gynæcological Disorders. M. M. White, Surgeon-Specialist, Three Counties Emergency Hospital. 2nd ed., 246 pp., illust. 16s. H. K. Lewis & Co. Ltd., London, 1946.

1945 Year Book of Industrial and Orthopædic Surgery. Edited by C. F. Painter, Orthopædic Surgeon to the Massachusetts Women's Hospital and Beth Israel Hospital, Boston. 432 pp., illust. $3.00. The Year Book Publishers Inc., Chicago, 1946.

Curare Intocostrin. The recent literature pertaining to the history, pharmacology and chemistry of curare, the development of intocostrin, A physiologically assayed preparation made from a native curare plant, chondodendron tomentosum, and the clinical uses of intocostrin. 292 pp. Published by E. R. Squibb & Sons, New York, 1946.

Mine Own Executioner. N. Balchin. 256 pp. $2.50. Wm. Collins Sons & Co. Canada Ltd., Toronto, 1946.

Modern Attack on Tuberculosis. H. D. Chadwick, Medical Director of Middlesex Tuberculosis Sanatorium, 1938-1941, and A. S. Pope, Deputy Commissioner of Public Health and Director of the Division of Tuberculosis, Commonwealth of Massachusetts. Revised edition, 134 pp. $1.00. The Commonwealth Fund, New York, 1946.

Occupational Therapy for the Limbless. P. Lyttleton, late Occupational Therapist, Ministry of Pensions Hospital, Leeds. 40 pp., illust. 3s. H. K. Lewis & Co. Ltd., London, 1946.

Science and Art of Medicine. Sir Lionel Whitby. 24 pp. 1s. 6d. (.45) Cambridge University Press, London, 1946. The Macmillan Company of Canada, Toronto.

Theory and Practice of Nursing. M. A. Gullan, S.R.N., Member of College of Nursing. 5th ed., 242 pp., illust. 12s. 6d. H. K. Lewis & Co. Ltd., London, 1946.

Annual Refresher Course of Dalhousie University Medical School

This Refresher Course will be held in conjunction with the Medical Society of Nova Scotia at Halifax from October 7 to 11, inclusive. Doctor Francis M. Rackemann of Boston and Doctor John C. Whitehorn of Johns Hopkins University Medical School, along with a team of speakers from the Canadian Medical Association, and Maritime physicians will furnish the program.

All physicians are cordially invited to attend.

It is specially urged that hotel reservations be made at once.

INSULIN

TWENTY-FIFTH ANNIVERSARY

The twenty-fifth anniversary of the discovery of Insulin will be marked by the American Diabetes Association at its meeting in Toronto on 16th, 17th and 18th September, 1946.

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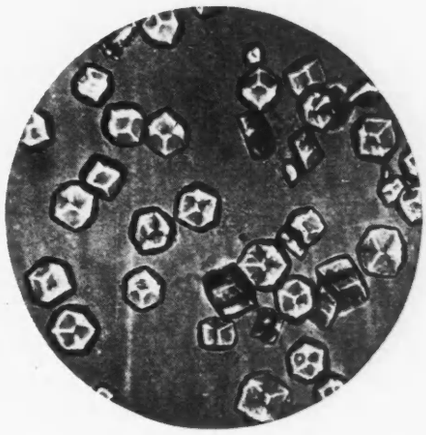

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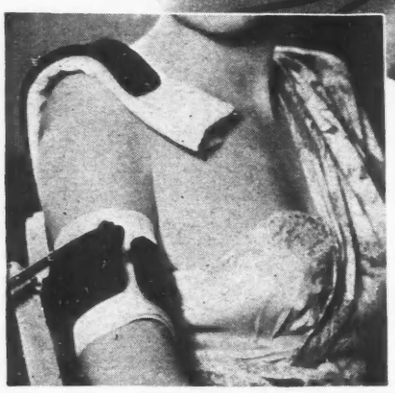

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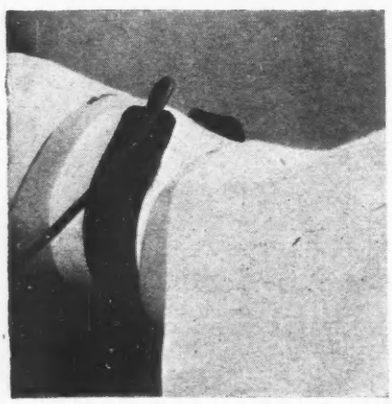

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THE SEVENTY-SEVENTH ANNUAL MEETING OF THE CANADIAN MEDICAL ASSOCIATION, HELD IN BANFF,

June 10, 11, 12, 13, 14, 1946

THE Seventy-seventh Annual Meeting of the Canadian Medical Association was held in the Banff Springs Hotel, Banff, Alberta, on June 10, 11, 12, 13 and 14, 1946. The registration included 889 doctors and 568 ladies, bringing the total attendance to 1,457.

The Annual General Meeting

The Annual General Meeting was held on Wednesday evening, June 12th. At this function, Senior Membership was conferred upon the following:

Drs. Charles Henry Vrooman, Vancouver
Gerald Rumsey Baker, Quesnel
Edgerton L. Pope, Edmonton
David Parker Miller, Prince Albert
Walter Gordon Campbell, Winnipeg
John Howard Holbrook, Hamilton
James E. Carnwath, Riverside
Henry Kirkwood MacDonald, Halifax
Lester Brehaut, Murray River
Charles Gowan Gurd, Westmount

Dr. Léon Gérin-Lajoie, the retiring President, presented a brief valedictory address.

After his installation as President, Dr. Wallace Wilson, of Vancouver, gave his inaugural address.

Fraternal greetings from the British Medical Association were conveyed by the official delegate Sir Leonard Parsons who also delivered the Blackader Lecture. Dr. Arthur W. Proetz, of St. Louis, Mo., extended greetings on behalf of the American Medical Association.

The General Council

The General Council met on Monday and Tuesday, June 10 and 11, under the Chairmanship of Dr. Harris McPhedran, with 101 delegates present from the nine Divisions.

The following is a list of those who answered the roll call:

Drs. J. D. Adamson, Winnipeg
G. H. Agnew, Toronto
D. C. Aikenhead, Winnipeg
J. F. C. Anderson, Saskatoon
Roy Anderson, Edmonton
A. E. Archer, Lamont
W. W. Bartlett, Brampton
P. E. Belliveau, Meteghan
A. E. Blackett, New Glasgow
Wm. Boyd, Toronto
W. Bramley-Moore, Calgary
H. E. Britton, Moncton
Lloyd Brown, Regina
Alex Burgess, A.M.A.
F. T. Campbell, Calgary
J. E. Carson, Brantford
M. R. Caverhill, Vancouver
H. B. Church, Aylmer East
F. Coppock, Eckville
P. A. C. Cousland, Victoria
C. L. Crang, Sudbury
J. W. Delahaye, Kingston
C. J. Devins, Aurora
H. V. Dobson, Peterborough
H. Dunham, Toronto
A. F. Dunn, Ottawa
Geo. H. Ettinger, Ottawa
G. S. Fahrni, Winnipeg
U. J. Gareau, Regina
Léon Gérin-Lajoie, Montreal
N. H. Gosse, Halifax
H. G. Grant, Halifax
R. I. Harris, Toronto
G. M. Hazen, Saskatoon
H. H. Hepburn, Edmonton
Carl E. Hill, Lansing
A. Hollenberg, Winnipeg
H. N. Jennings, Calgary
W. B. Johnston, Lucknow
A. D. Kelly, Toronto
J. D. Kinsman, Ottawa
W. Laishley, Nelson
L. H. Leeson, Vancouver
T. H. Leggett, Ottawa
D. Sclater Lewis, Montreal
W. A. Lincoln, Calgary
J. G. K. Lindsay, Saskatoon
J. G. B. Lynch, Sydney
E. K. Lyon, Leamington
William Magner, Toronto
R. H. Malyon, Toronto
J. R. Martin, Neepawa
J. Murray Matheson, Brandon
G. O. Matthews, Vancouver
A. E. Meneely, Nanaimo
A. F. Menzies, Mordon
H. H. Milburn, Vancouver
E. S. Mills, Montreal
A. J. Murchison, Charlottetown
E. A. McCusker, Regina
H. E. MacDermot, Montreal
Eric W. MacDonald, Glace Bay
H. K. MacDonald, Halifax
J. E. McGillivray, Weyburn
D. F. McInnis, Shubenacadie
W. J. P. MacMillan, Charlottetown
F. G. McGuinness, Winnipeg
P. H. MacNulty, Winnipeg
Harris McPhedran, Toronto
A. B. Nash, Victoria
O. W. Niemeier, Hamilton
Harold Orr, Edmonton
Jean Paquin, Quebec City
L. L. Playfair, Hamilton
A. D. Pollock, Owen Sound
H. A. L. Portnuff, Yorkton
A. Powers, Rockland, Ont.
H. M. Robertson, Victoria
H. Graham Ross, Montreal
T. C. Routley, Toronto
J. Saucier, Montreal

INDEX

	Page
Approval of Hospitals for Internship	225
Archives Committee	200
Cancer Control Department	217
Central Program Committee	225
Constitution and By-Laws Committee	221
Consultant in Medical Economics	216
Credentials and Ethics Committee	224
Economics Committee	226
Editor	215
Education Committee	219
Epidemics Committee	219
Executive Committee	201
Honorary Treasurer	208
Industrial Medicine Committee	219
Laboratory Technicians	224
Legislation Committee	223
Maternal Welfare Committee	220
Managing Editor	215
Membership Committee	218
Pharmacy Committee	218
Public Health Committee	219
Special Committee *re* Medical Care of Veterans	204

H. W. Schwartz, Halifax
A. C. Scott, Indian Head
D. L. Scott, Winnipeg
J. W. Scott, Edmonton
W. de M. Scriver, Montreal
George Skinner, Saint John
A. H. Spohn, Vancouver
G. F. Strong, Vancouver
D. A. Thompson, Bathurst
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Ethlyn Trapp, Vancouver
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C. H. A. Walton, Winnipeg
Vance Ward, Montreal
W. P. Warner, Ottawa
C. C. White, Chatham
Geo. White, Saint John
Wallace Wilson, Vancouver
CAMSI: Miss H. Kidd
Mr. Black

REPORT OF THE COMMITTEE ON ARCHIVES

Mr. Chairman and Members of General Council:—

1. Your Committee reports with deep regret the loss of the following members by death during the past year:

Archibald, E. W., Montreal (Past Secretary)
Astwood, E. M., Penn, U.S.A. (Que. Div.)
Atkinson, J. R., Vancouver

Batanoff, B. P., Blaine Lake, Sask.
Beaton, M., Sherbrooke, Que.
Benson, H. W., Port Hope, Ont.
Bond, J. H. R., Winnipeg
Boyce, B. F., Kelowna, B.C. (Senior Member)
Burt, G. S., Owen Sound, Ont.

Cameron, J. J., Antigonish, N.S.
Campbell, Duncan A., North Bay, Ont.
Campbell, J. H., Kingston, Ont.
Campbell, John Ewart, Vancouver
Carscadden, R. H., Lindsay, Ont.
Carson, R. J., Orillia, Ont.
Carson, W. H., Southampton, Ont.
Carter, L. J., Brandon, Man.
Cherry, A., Lethbridge, Alta.
Clark, A. M., Toronto
Cliff, G. F., Burwash, Ont.
Coffyne, H. M., Shellbrook, Sask.
Cote, G. L., Quebec City
Cragg, C. C., Peterboro, Ont.
Crux, A., Edmonton
Cumming, C. R., Galt, Ont.

Donovan, O. G., Halifax

Eberts, E. M., Montreal
Elgie, W. A., Chatham

Fisk, W. M., Montreal

Gaby, R. E., Toronto
Garceau, J. H., Montreal
Gillespie, J. A., Vancouver (Senior Member)
Godfrey, W. H., Toronto
Gorrell, W. R., Winnipeg
Graham, Colin, Vancouver
Gray, G. C. Edmonton

Haffner, A. B., Kingston
Hache, E. J., Upper Caraquet, N.B.
Hare, Dora, Simcoe, Ont.
Harvie, J. N., Orillia, Ont.
Hastings, H. E., Winnipeg
Hazlewood, H. C. P., Gravenhurst, Ont.
Heagerty, J. J., Ottawa
Henderson, V. E., Toronto (Chairman Committee on Pharmacy)
Henry, G. A., Sudbury, Ont.
Hixon, E. W., Watrous, Sask.
Howell, R. G., Jarvis, Ont.
Huyck, P. H., Kingston

Kidd, C. B., Edmonton

Laird, A. F., Owen Sound, Ont.
Laughlen, G. F., Toronto
Laughton, N. B., Toronto
Laurendeau, N. A., St. Boniface, Man.
Leblond, J. E. R., Prince Albert, Sask.
Leney, J. M., Winnipeg
Little, T. R., Ottawa
Lowrey, R. C., Toronto
Lundon, C., Montreal

Magee, C. F., Moscow, Idaho, U.S.A.
Malcolm, W., New York
Mann, A. H., Olds, Alta.
Martineau, G. H., Montreal
Masson, D., Montreal
Meekison, D. M., Vancouver
Mercier, O., Montreal
Mitchell, J. P., Toronto
Moody, A. J., Brechin, Ont.
Morgan, J. A., Peterboro, Ont.
Morrison, M. D., Halifax
Mulligan, J. F., Weston, Ont.
Murphy, A. E., Stayner, Ont.
Murray, A. A., Winnipeg
Murray, L. M., Toronto
Musgrave, J. J., Toronto
McCammon, F. J., Huntington, L.I.
McCombe, J., Montreal
McCulloch, W. G., Oshawa, Ont.
McDiarmid, C., Vancouver
Macdonald, J. A., St. Peters, N.S.
Macdonell, J., Victoria
MacDougall, D. S., Russell, Ont.
McEachern, J. D., Winnipeg
McFarlen, H. A., Winnipeg
McGregor, J. K., Hamilton
McInnis, J. A., Timmins, Ont.

MacIntosh, G. A., Halifax
McKenzie, J. B., Newcastle, N.B.
McKinnon, A. P., Winnipeg
MacLean, K. A., Sudbury, Ont.
MacMaster, D. J., Antigonish, N.S.
Macneill, J. W., North Battleford, Sask.
MacQueen, C. A. S., Amherst, N.S.
MacRae, A. L., Sawyerville, Que.
McVey, W. B., Saint John, N.B.

Nicholls, A. G., Montreal (Editor Emeritus, Elected Honorary Member, Jasper Park, June 1942)

Patrick, T. A., Yorkton, Sask. (Senior Member)
Patterson, J. R., Medicine Hat, Alta.
Peacock, H. J., Toronto
Pennoyer, A. R., Montreal
Planche, H. H., Pender Harbour, B.C.
Porter, A. S., Timmins, Ont.
Prevost, J. E., Montreal
Pritchard, J. R., Ottawa

Richardson, R. S., Pefferlaw, Ont.
Rogers, H. B., Victoria
Rogers, J. M., Ingersoll
Rogers, W., Winnipeg
Ross, Herbert, Montreal
Ross, J. A., Mont Joli, Que.

Sanmiya, M., Lamont, Alta.
Scott-Moncrieff, W. E., Victoria
Shaw, H. S., Montreal
Shillington, A. T., Ottawa (Charter Member)
Ship, A. P., Montreal
Shipley, M., Calgary
Shubin, A. L., Winnipeg
Sigvaldason, J. M., Ninette, Man.
Sirois, L. J. O., St. Ferdinand d'Halifax, Que., (Elected Senior Member, June 1943)
Skinner, S. S., Saint John, N.B.
Smith, B. S., Vancouver
Solway, L. J., Toronto
Stewart, P. D., Saskatoon (Elected Senior Member, Winnipeg, 1941)
Stone, W. R., Vanderhoof, B.C.
Story, G. E., Edmonton
Sutherland, J. A., Vancouver

Trimble, N. G., The Pas, Man.

Vipond, C. W., Montreal

Walker, M. J. O., Merrickville, Ont.
Walsh, W. P., Queen Charlotte Islands, B.C.
Watson, W. V., Toronto
Waugh, R. J., Carberry, Man.
Weekes, W. J., London, Ont.
Wiley, W. D., Brantford, Ont.
Williams, E. J., Montreal
Winter, D. E., Ottawa
Withrow, O. C. J., Toronto
Wray-Johnston, K. H., Vancouver

All of which is respectfully submitted,

H. E. MACDERMOT,
Chairman.

Approved.

REPORT OF THE EXECUTIVE COMMITTEE

Mr. Chairman and Members of General Council:—

Your Executive Committee presents the following report:

MEETINGS OF THE COMMITTEE

2. The Committee has met four times during the year. The attendance has been excellent at each meeting.

CHAIRMANSHIP

3. At its first meeting held in Montreal on June 14, 1945, the Committee had before it a recommendation from General Council that a Public Relations Officer or Consultant in Medical Economics be appointed at the earliest possible date. It was the view of the Committee that Dr. A. E. Archer of Lamont possessed in a high degree the qualifications necessary for the post. Accordingly, Dr. Archer was asked by the Committee to accept the position of Consultant in Medical Economics to the Association, which he agreed to do. Dr. Archer felt, and the Committee agreed, that, in accepting a position of emolument from the Association, he should withdraw from the Chairmanship. When the Committee next met in October, Dr. Archer's resignation as Chairman of General Council and Chairman of the Executive Committee was accepted and Dr. J. Harris McPhedran, a member of the Committee, was appointed to fill the two offices for the balance of the year.

MEDICAL ECONOMICS CONSULTANT

4. Dr. Archer has visited all the Provinces during the year and has kept in very close touch with everything that went on in respect to the health aspects of the Dominion-Provincial Conferences and health legislation in the Provinces. He will report to Council upon the year's activities.

THE MONTREAL MEETING

5. With an attendance of 1,574, including 224 ladies, an excellent program, hospitality of a high order and weather which was kind, the Seventy-sixth Annual Meeting was a decided success.

Our President and Madame Gérin-Lajoie and their fellow workers on the various committees deserve sincere thanks and congratulations. Council will no doubt adopt this Minute with appreciation and pleasure.

THE VICTORY MEETING

6. When it was found that our Seventy-seventh Annual Meeting could be housed at Banff Springs Hotel, the President-Elect and Mrs. Wallace Wilson and their Vancouver associates did not hesitate to make the change over from Vancouver, although they recognized that considerable extra labour would be entailed due to working from a distance. But difficulties offer no barriers to some people, among whom must be numbered our Victory Meeting hosts.

As the program for the week progresses, Council will be conscious of the careful thinking and planning which went into the building of the week's activities. Special mention should be made of the arduous duties of the Housing Committee who have tucked away some 1,300 people and have had the unpleasant duty of sending letters of regret to nearly 1,000 more.

All the Committees have discharged their duties in a most commendable manner. Council will desire to record its grateful acknowledgment and appreciation to the President-Elect, to Mrs. Wilson and their associates.

FUTURE ANNUAL MEETINGS

7. Plans have been made for the Seventy-eighth Annual Meeting to be held in Winnipeg during the week of June 23rd, 1947.

It is recommended that, for the ensuing two years, the Association meet in Toronto in 1948, and in Saskatoon in 1949.

ANNUAL MEETINGS OF DIVISIONS

8. The Ontario Division held its Sixty-sixth Annual Meeting in Toronto during the week of May 20th, 1946. The President attended in his official capacity, thus completing his tour of duty, having attended the annual meetings of the Western and Eastern Divisions during the autumn of 1945.

The British Columbia and Alberta Divisions plan to hold their annual meetings as business sessions at the time of this convention, on Tuesday, June 11th, 1946, in Banff Springs Hotel.

Saskatchewan, Manitoba, New Brunswick, Prince Edward Island and Nova Scotia are planning to hold their annual sessions in the months of September and

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October next. It has been arranged that travelling teams of speakers will be sent to these meetings by the Association and it is also anticipated that the President and General Secretary will be present.

Senior Members

9. In accordance with the provision of Chapter 2, Section 3 of the By-Laws, the following Senior Members were elected by your Executive Committee at a regular meeting of the Committee held in Ottawa on March 4 and 5, 1946:

Dr. Charles Henry Vrooman, Vancouver
Dr. Gerald Rumsey Baker, Quesnel
Dr. Edgerton L. Pope, Edmonton
Dr. David Park Miller, Prince Albert
Dr. Walter Gordon Campbell, Winnipeg
Dr. John Howard Holbrook, Hamilton
Dr. James E. Carnwath, Riverside
Dr. Henry Kirkwood MacDonald, Halifax
Dr. Lester Brehaut, Murray River
Dr. Charles Cowan Gurd, Westmount

These members have been invited to be present at the Annual General Meeting on the evening of Wednesday, June 12th, to receive their badges and certificates.

Membership

10. At the annual meeting in 1945, the following resolution was passed:

> "That this Executive Committee advise the nine Divisions that, upon receipt of advice from a Division that a demobilized doctor has been granted free membership in that Division for a period to include one full calendar year following his demobilization, the C.M.A. grant this member free membership for the same period, including the *Journal*."

The number who have taken advantage of this provision is shown in the chart which follows.

The following is a comparative statement of membership for the years 1945 and 1946:

Province	*Paid 1945*	*Paid 1946 (as at May 1st)*	*Demobilized Medical Officers, 1946*
British Columbia ...	470	393	171
Alberta	550	477	52
Saskatchewan	301	382	119
Manitoba	420	299	124
Ontario	2,511	2,353	1,026
Quebec	824	694	173
New Brunswick	232	216	51
Nova Scotia	280	223	49
Prince Edward Island	52	38	6
	5,640	5,075	1,771
Medical Officers (free membership for 1945)	3,900		
Paid Membership in 1946			5,075
Demobilized Medical Officers, 1946			1,771
Medical Officers still in Service			2,129
TOTAL			8,975

C.M.P.A.B.

11. After close upon four years of service, the Canadian Medical Procurement and Assignment Board was disbanded on March 31, 1946. It will be recalled that the Association had five representatives on this Board and that nine Divisional Advisory Committees of the Board stemmed from the original Provincial committees set up by the C.M.A. at the beginning of the war. It is the opinion of your representatives that the Board served a useful purpose in Canada's war effort.

At its concluding meeting, the Board passed the following resolutions which will be of interest to General Council:

1. "That in as much as this Committee feels that the C.M.P.A.B. has been of tremendous value to the people of Canada, to the Medical Services of the Armed Forces, to the Department of National Health and Welfare, to the Department of Veterans' Affairs and to the medical anl allied professions of Canada, and that its continuance or the creation of a similar body may prove to be a useful asset to the Dominion, it stands at the disposal of the Government for the re-organization of such similar body when and as the Government or one of its Departments wishes it to be re-organized."
   (Passed to the appropriate Departments of Government)
2. "That, recognizing the value to the Federal Government Medical Services during wartime, of the work done by the C.M.P.A.B. in coordination with the work of such Government Departments, this committee would recommended that an inter-departmental co-ordinating committee to consider all matters relating to federal responsibilities in the health field be set up, with representation from appropriate Federal Government Departments and added advisers from the Canadian Medical Association, the Canadian Hospital Council and other appropriate national representatives."
   (Passed to the appropriate Departments of Government.)

The Executive Committee appointed the General Secretary as the Association's representative on the Inter-Departmental Co-ordinating Committee.

Soldiers' Dependents Board of Trustees

12. A special committee under the Chairmanship of Dr. D. Sclater Lewis was appointed last year to confer with the Soldiers' Dependents Board of Trustees for the purpose of negotiating a tariff and agreeing upon procedure for the medical care of soldiers' dependents. A satisfactory arrangement was completed by the committee, which called for the adoption of the tariff which was devised for the D.V.A., it being agreed to give a 20% reduction on all individual items over $10.00. However, as the D.V.A. Tariff has not yet been promulgated the scheme is held in abeyance.

On the request of the Board of Trustees, the Association asked the Divisions to appoint Medical Advisory Committees in various parts of Canada, which your Executive Committee understands has been done.

Department of Veterans' Affairs

13. This section of the report should be read in conjunction with the report of the Special Committee *re* Medical Care of Veterans, printed herein.

On May 2nd, 1945, the Director General of Treatment Services for Veterans' Affairs advised that the Minister, the Honourable Ian MacKenzie, had approved a policy (under certain conditions), of returned soldiers being given access to the services of their family physicians, rather than requiring them to report to medical representatives of the Department. The Department invited the C.M.A. to present its views and suggestions, especially with respect to tariff.

14. On June 10, 1945, in annual session, the Council accepted the invitation of the Department of Veterans' Affairs,

(*a*) to prepare a tariff to be used in the Family Doctor Scheme; and

(*b*) to set up medical advisory committees.

Each of the Divisions was invited to send a representative to a special committee on tariff which, under the Chairmanship of Dr. F. G. McGuinness, met in Ottawa in October, 1945, for a period of several days. On December 15th, 1945, the tariff was presented to the Director General of Treatment Services. Subsequently the Association was advised that it was acceptable to the Honourable Minister and would be distributed to the medical profession of Canada. It is our understanding that the tariff and regulations were printed in book form and were ready for distribution in January. In December, the Department invited the Canadian Medical Association to set up medical advisory committees across Canada. This invitation was accepted and most if not all of the committees have been appointed.

15. During the early part of 1946, there appeared to be some unaccountable delay in putting the Family Doctor plan into effect, and on February 27th, the Deputy Minister of D.V.A. advised your General Secretary, *inter alia*, as follows:

> "Whilst the Family Doctor Scheme is endorsed, the schedule of fees submitted was not concurred in. . . . . It would be premature to distribute the schedule or release it at this stage of negotiations."

In explanation of the above, your Committee was advised that the Treasury Board of the Government after examining the tariff, stated that it was too high and that it should be modified. Conferences have been held with the Treasury Board which still adheres to its opinion that the tariff is too high and should not be adopted by D.V.A. Consequently, the printed tariff and regulations have not been distributed to the medical profession, although we are informed that in all other respects save Tariff, the Family Doctor Plan has been approved and announced in at least some of the Provinces with the 1943 fee schedule being utilized. Your Committee cannot refrain from expressing its regret at the long delay which has ensued in putting the Minister's announcement of one year ago into effect with the full and hearty co-operation of the medical profession.

It is anticipated that the Director General of Treatment Services for the Department, who is a member of General Council, will be prepared to make a statement in Council and put forward some proposals.

Pharmacy

16. Council deplores the death of one of its most faithful members, Dr. V. E. Henderson, Chairman of the Committee on Pharmacy, who passed away last summer before the Formulary on which he had been working for several years, was completed. Dr. J. K. W. Ferguson, his successor as Professor of Pharmacology at the University of Toronto, kindly accepted the Chairmanship of the Committee and has taken up the work where Dr. Henderson left off. The Formulary is now being printed and it has been decided by the Executive Committee to send a complimentary copy to every Doctor in Canada who expresses a desire to have one. A French translation of the Formulary is also being prepared for printing and distribution.

In connection with the Family Doctor Plan, the Formulary has been adopted by the Department of Veterans' Affairs as its official Formulary.

Hospital Service Department

17. Following the recommendations of the Association's Committee on Hospitals, a Department of Hospital Service was established in 1928 with Dr. Harvey Agnew of Toronto as Secretary. Since its inception this Department has rendered splendid service to the hospitals of Canada and has seen considerable development in the hospital field, particularly the establishment of the Canadian Hospital Council, a body which in a large measure parallels our own Association, and is representative of the majority of the hospitals of Canada. It became increasingly clear in recent years that the Canadian Hospital Council required the full-time services of an administrator and it was anticipated that the services of Dr. Agnew would be desired for this post. Accordingly, on January 1st, 1946, Dr. Agnew became full time Executive Secretary of the Canadian Hospital Council.

Your Committee feels that it will be the desire of Council to spread on its minutes a resolution expressing to Dr. Agnew its warm appreciation of the splendid manner in which he served the medical profession and the hospitals of Canada during the seventeen years he was secretary of the Department of Hospital Service.

New Appointment

18. In the reorganization which has taken place during the year, it became necessary to appoint an Assistant Secretary. Your Committee was unanimous in the selection of Dr. A. D. Kelly for the post. The members of the Board of Directors of the Ontario Division agreed to release Dr. Kelly on condition that he continue to act as Secretary of the Division for a period not to exceed a year, during which time his successor will be made familiar with his duties.

Housing

19. On January 1st, 1924, the Toronto office took up quarters at 184 College Street where accommodation was provided by the University of Toronto for a nominal rental of $1.00 a year, which included office accommodation also for the Ontario Medical Association. After 22 years it has been found necessary to seek other quarters due to the fact that the University's building program requires the demolition of the building at 184 College Street to make room for a new science building.

20. It is recommended that Council spread upon its minutes:

1. a resolution expressing thanks to the Board of Governors of the University of Toronto for their great generosity for this lengthy period;
2. a similar resolution of thanks to McGill University which institution has housed the financial and editorial offices of the Association since their inception.

Accommodation has been secured for the Toronto office at 135 St. Clair Avenue West.

United Nations Medical Congress

21. In October, 1945, your committee recommended to the Government of Canada that a Medical Division of the United Nations should be formed, and proposed that the first Medical Congress be held in Canada. Your Committee later provided suggestions to the Government with respect to the organization of a United Nations Health Division.

At time of going to press, Dr. Brock Chisholm, the Deputy Minister of National Health for Canada, is in Paris attending a meeting of the preparatory committee of the United Nations Health Division. Your committee has no knowledge as to where the first Congress will be held.

Rehabilitation Grant

22. In June, 1945, the Association received a cheque for $20,000 from the Department of Veterans' Affairs to be used in providing a special rehabilitation counselling service for medical officers leaving the forces (Order-in-Council P.C. 3999, June 7, 1945). In as much as the C.M.P.A.B. carried on until March 31st, 1946, it has not been necessary to use this money. It has been suggested to the Government that:

1. as the C.M.P.A.B. has disbanded, counselling service to returned and returning medical officers continue to be rendered by the C.M.A. and its component parts; and

2. if the Government sees fit to allow the grant to be continued for one year, as from March 31, 1946, it can be used in whole or in part, in keeping with the terms of reference of the Order-in-Council, which pointed out that the C.M.A. is well qualified to assist the D.V.A. in giving counsel and advice to demobolized medical officers.

CANCER

23. Your Committee recommended to the Trustees of the King George V Silver Jubilee Cancer Fund for Canada,—

1. that $100,000 be advanced to the Canadian Cancer Society for the coming year, and $50,000 annually for the succeeding four years;
2. that the Canadian Cancer Society be requested to submit to the Trustees a complete and satisfactory program of its projected activities for this five year period;
3. and that the Canadian Cancer Society endeavour to arrange for the reimbursement of the King George V Silver Jubilee Cancer Fund to the extent of the amounts advanced. Your Committee believes that there is a useful part to be played by an active well organized national cancer society in the attack upon the cancer problem.

OTHER ACTIVITIES

24. There are a great many problems relating to the interest and welfare of the medical profession which engage the attention of your Executive Committee during the year. In respect to many of them reference to the Divisions is frequently necessary and it is a mattter of much satisfaction to your Committee to report that in such instances the co-operation of the Divisions is cordial and helpful.

CONCLUSION

25. Once again your committee desires to record its appreciation of the valuable services rendered by the various committees and individual members who have given so freely of their time during the year.

All of which is respectfully submitted,

J. HARRIS MCPHEDRAN,
Chairman.

T. C. ROUTLEY,
General Secretary.

Approved.

REPORT OF THE SPECIAL COMMITTEE RE MEDICAL CARE OF VETERANS

Mr. Chairman and Members of General Council:—

TERMS OF REFERENCE

26. The Committee appointed by the Executive Committee of the C.M.A., consisting of a Chairman, (a member of the Executive of the C.M.A., and appointed by it) and a representative of each Divisional Committee, appointed by the respective divisions, met in Ottawa, October 25th, 26th, 27th, 1945.

This Committee was struck as a result of a communication received from Dr. W. P. Warner, Director General of Treatment Services, D.V.A., requesting the C.M.A. to appoint a committee to advise the Department of Veterans' Affairs regarding a schedule of fees, and other matters related thereto—following the information that the D.V.A. had "approved of a policy which will permit veterans the free choice of their own doctors".

MEMBERSHIP

27. This Committee met under the Chairmanship of Dr. Fred McGuinness, with the following membership in attendance:

British Columbia Division, Dr. R. H. Mustard
Alberta Division, Dr. W. A. Lincoln
Saskatchewan Division, Dr. J. F. C. Anderson, (*Secretary*)
Manitoba Division, Dr. F. D. McKenty
Ontario Division, Dr. A. F. Dunn
Quebec Division, Dr. C. A. Gauthier
New Brunswick Division, Dr. A. F. Van Wart
Nova Scotia Division, Dr. J. G. B. Lynch
Prince Edward Isl. Division, Dr. J. A. MacPhee

CONSIDERATIONS

28. The deliberations of this Committee fell under two headings, namely:

FEES

1. The preparation of a Schedule of Fees, *re* the Medical Care of Veterans;

PLANS OF D.V.A.

2. The determining of what plans the Department of Veteran's Affairs had for the medical care of veterans in the light of discrepancies in the letters of advice, and the knowledge that a very considerable number of Class 5 Veterans were to come under this Department's care in perpetuity, and how far the D.V.A. might be disposed to change the plan of medical care outlined in the Director General's letter of June 26th, 1945.

29. 1. SCHEDULE OF FEES FOR THE CARE OF VETERANS

The Schedule of Fees which will be available to Council consists of a General Practitioners' and a Specialists' section.

GENERAL PRACTITIONER

Your Committee felt that the remuneration accorded the General Practitioner has not yielded returns sufficient to continue to attract men to this essential basic type of practice, and that every opportunity should be sought to make his return more adequate.

DIFFICULTIES AND SIGNIFICANCE

Your Committee was cognizant of the difficulties, and the possible significance of drawing up a Dominion Schedule relative to its probable effect on fee structure if and when Health Insurance becomes operative.

SPECIALIST FEES

Your Committee experienced considerably more difficulty on attempting to list "specialist procedures". The necessity for having such a schedule was considered urgent. A schedule has been drawn up listing "specialist procedures".

RECOMMENDATIONS

Your Committee made the following further recommendations in presenting the Schedule of Fees:

1. The Schedule as presented is a minimum schedule, and is not subject to discount.
2. Items not included in the Schedule shall be computed in equity with procedures of similar responsibility and skill.
3. Complicated or Lengthy Cases. All fees listed apply when a normal amount of care is required in an average case. When exceptional skill is required because of complications, or when a larger than normal number of visits or of time is required to treat the case, the attending physician is entitled to extra re-

muneration over the scheduled fees to compensate him for the extra skill or extra visits, or extra time involved.

4. Provision for the adjustment of any schedule is to be recommended, according to changing national economic conditions.

5. The right of revision of any schedule in whole or in part must be secured at reasonable intervals of time.

30. 2. THE DETERMINING OF WHAT PLANS THE DEPARTMENT OF VETERANS' AFFAIRS HAD FOR THE MEDICAL CARE OF VETERANS, AND HOW FAR THAT DEPARTMENT MIGHT BE DISPOSED TO MODIFY THE PLAN OUTLINED ON JUNE 26TH, 1945:

The following general principles were suggested for the working out of the D.V.A. plan:

(*a*) Liaison should be effective between the Head Office of the Department of Veterans' Affairs and the C.M.A. The special committee, authorized by the Council of the C.M.A. should be considered by the Department of Veterans' Affairs as representing the C.M.A. for the carrying out of the policy of the provision of medical care to veterans by the family doctor.

(*b*) Liaison should be effective between D.V.A. Administrative Districts and the Provincial Division or Divisions of the C.M.A. in which the Districts are located.

(*c*) The Provincial Divisions of the C.M.A. will keep District and/or local Medical Societies informed of those developments and arrange for liaison between Chief Medical Officers of the D.V.A. and the executives of such societies.

(*d*) The C.M.A. will, through its Provincial Divisions and District Medical Societies, Council of the College of Physicians and Surgeons, or other proper authorities, assume on behalf of the profession, the responsibility of supervising the provision of adequate services, the necessary clinical reports and the charges made for services rendered.

(*e*) The primary control of medical practice in any area rests in the hands of the Doctors practising in that area. The Department should do all in its power to encourage District and/or local Medical Societies to become interested in the operation of this plan.

31. Following the establishment of a schedule of fees applicable to the whole country, the following practice is proposed:

(*a*) Veterans should be permitted to report for treatment to the physician of their choice subject only to the limitations suggested below.

(*b*) Clinical reports and accounts for services rendered should be submitted by the attending physician and/or hospital to the Chief Medical Officer of the D.V.A. Administrative District concerned.

(*c*) Departmental forms should be used, and these should be simplified and minimized in number to the greatest possible extent.

(*d*) A useful purpose would be served if these forms and reports could be submitted to or discussed with the committee of the C.M.A. before they become effective.

(*e*) The schedule of fees approved by the Canadian Medical Association and the Department should be followed, with no discount after assessment.

(*f*) In areas where there are no D.V.A. hospitals, services should be provided by or through the family physician, subject to the limitations shown in (i), (ii) and (iii) below. Necessary reports at the commencement of, during and at the conclusion of treatment should be submitted to the C.M.O. of the Administrative District of the Department.

(i) Elective surgery should not be done without approval of the C.M.O.

(ii) Cases previously treated by the armed services during active service and referred to the D.V.A. on discharge and who need further hospital treatment by the special services operated by the Department, such as certain orthopædic, plastic, neurological, arthritic, chest, etc., conditions should not be treated *for these conditions* except in emergencies without approval of the C.M.O. Such cases should generally be hospitalized in D.V.A. hospitals under the care of D.V.A. hospital staffs.

(iii) Hospital facilities, including staffs, both in and out-patient of this Department, should ordinarily be used wherever available for the treatment of conditions attributable to service. Practising physicians in any area should refer patients requiring treatment for any condition whether attributable to service or not, to the consultant selected by him or on the request of the veteran whether this consultant is on the staff of the D.V.A. or not, subject to the approval of the C.M.O. The welfare of the patient must always remain the primary consideration in making the necessary arrangements.

(*g*) In areas where D.V.A. hospitals are situated, medical services should also be provided by the family physician with the qualifications shown in (i) and (ii) below.

(i) Veterans in areas where D.V.A. hospitals are located should have the right to be treated by the doctor of their choice and if hospitalization is required and if the doctor selected be not a member of the staff of a D.V.A. hospital, the veterans should be treated either in a civilian hospital or if possible in a section of the D.V.A. hospital set aside for the reception and treatment of patients by other than staff members.

(ii) Cases previously treated by the armed services during active service and referred to the D.V.A. on discharge and who need further out-patient treatment by the special services operated by the Department, such as certain orthopædic, plastic, neurological, arthritic, chest, etc. conditions, should not ordinarily be treated, except in emergencies, without approval of the C.M.O.

(*h*) Standard pharmaceuticals should be ordered as required. Charges for same should be dealt with apart from charges for medical care.

32. In the case of veterans with pensionable disabilities in excess of say 15%, there are special reasons for their treatment in D.V.A. hospitals or by D.V.A. staff. We nevertheless strongly urge that provision be made in the regulations to permit consultation with, and treatment by, a doctor not on the staff of the D.V.A. hospital when such is desired by the veterans, on the approval of the C.M.O.

33. It is further our view that it would be in the best interest of all concerned that any agreement entered into should form the basis of operation for a period of at least two years—subject to review and alteration by mutual agreement.

34. This report was completed and in the hands of the D.V.A. on December 14th, 1945. At the Executive Meeting of the C.M.A. in March it was learned that the Treasury Board had turned the schedule of fees back for further consideration on the basis that some of the fees were too high. The Executive appointed Dr. A. E. Archer, Dr. T. C. Routley and Dr. Fred McGuinness to interview the Deputy Minister of Veterans' Affairs. This was done on March 5th, 1946, at which time the following arguments were advanced in favour of its adoption by the Treasury Board:—

1. On request of the Department, the tariff was devised by the Canadian Medical Association and has been accepted by the nine provincial divisions of the Canadian Medical Association.

2. The Department has been permitted to upgrade its salaries to medical men, both professional and administrative, by as much as 50% in order to attract suitable doctors to the Department.

3. Medical tariffs in Canada were frozen during the war and have not been officially increased in any province during the war. As an illustration, in 1942, the Wartime Prices and Trade Board advised the medical profession in Saskatchewan not to increase their medical tariff.

4. Workmen's Compensation Board tariffs in the several provinces have not been revised upwards in many years so far as we know and are out of line with present-day economic conditions. We are informed that the medical tariffs adopted in United States for the family care of veterans are as high or higher than the tariff under discussion.

5. Liaison has been effected with the Canadian Medical Association centrally, provincially and locally. This liaison guarantees that the medical profession of Canada is prepared to co-operate with this Department in all aspects of the service. If the tariff is found to be too high, which we doubt that it is too high, we have the assurance that the Canadian Medical Association will be quite willing to examine the tariff with a view to its revision. The Canadian Medical Association has no facilities to produce another tariff in less than six months' time as it would have to be referred to the provincial medical associations for their concurrence and these associations do not meet again in the majority of instances until next autumn. It is proposed that the present schedule be adopted immediately for an experimental period of say one year.

6. In further regarding items in the tariff, it must be recognized that the attending physician is required to make a careful history and report thereon to the Department of Veterans' Affairs. That report represents in first calls a substantial part of the cost. Canadian insurance companies do not hesitate to pay a doctor Five Dollars ($5.00) for a complete physical examination, together with a report thereon. D.V.A. is assured that the Canadian Medical Association is always prepared to re-examine any tariff that may be accepted by the Department.

7. Questions have been raised with regard to the tariff being higher than obtains in rural medical practice. This is probably correct in many areas. It is not a valid argument, however, against raising the standard of income of the country doctor in order that more good doctors may be attracted to the country.

35. According to the best available information, Canada needs more doctors and should the provinces embark upon plans of Health Insurance, Canada would need a great many more doctors. For many years prior to the war, Canada lost a large number of doctors to other countries, notably United States. It would be undesirable to have medical tariffs in Canada continue considerably below medical tariffs in United States, the net result of which would only be to lose more Canadian doctors to that country.

At time of preparation of this report the tariff is not reported as adopted by the Treasury Board. Accordingly the whole scheme is still unannounced to the medical profession of Canada. Further developments will be reported to Council when it meets.

All of which is respectfully submitted,

FRED G. McGUINNESS,
Chairman.

Approved.

SUPPLEMENTARY REPORT OF THE SPECIAL COMMITTEE RE MEDICAL CARE OF VETERANS

The negotiating Committee consisting of Drs. McGuinness, Archer and Routley, met the D.V.A. Medical Committee, Drs. Warner, Farmer and Kinsman, in Ottawa, for two days, May 27-28, 1946.

Inasmuch as the Treasury Board had refused to accept the tariff submitted by the C.M.A. and accepted by D.V.A., your Negotiating Committee thought it proper to convene with the D.V.A. before the Meeting of Council in the hope that a compromise might be suggested which would be acceptable to all concerned. With this end in view, the joint committee went over the tariff, item by item.

A computation has been made.

Items in the original tariff dealt with.....	953
Items eliminated (to be discussed later).....	515
Items proposed to be included in the revised tariff..	438
Of this number, Items reduced	29
Items raised	8
Items not changed	401

Items reduced are as follows:

First office visit	$ 3	to	$ 2
First call	4	to	3
Blood transfusion administered in hospital	15	to	10
Vein dissection	25	to	20
Confinement only in hospital	30	to	25
Cauterization of cervix	25	to	20
Osteotomy, hallux valgus	50	to	40
Thyroidectomy (unilateral)	140	to	125
Empyema, simple closed drainage	40	to	35
Empyema, with rib resection	65	to	60
Laparotomy	100	to	85
Appendectomy	100	to	85
Gastrectomy	225	to	200
Inguinal hernia, radical cure single	100	to	85
Inguinal hernia, radical cure double	150	to	135
Proctoscopy	10	to	5
Hæmorrhoidectomy	50	to	40
Amputation of toe, metacarpal or metatarsal	50	to	35
Fracture of patella, non-operative	45	to	35
Fracture of the tarsal bones	50	to	40
Manipulating semi-lunar cartilage	15	to	10
X-rays by General Practitioners:			
Barium series, œsophagus and stomach	20	to	15
Barium series, gall bladder visualization	28	to	20
Barium series, and colon with barium enema	28	to	20
Barium series, colon and gall bladder visualization	36	to	25
Trans-urethral resection	200	to	150
Prostatectomy	200	to	150
Rupture of bladder repair	175	to	150
Sub-mucous resection	100	to	75
Resection of turbinate	35	to	25
Tonsillectomy (under general anæsthesia)	50	to	40

Items which were raised:

Pneumothorax	10	to	15
Hernia, simple reduction	10	to	15
Hernia, strangulated reduction	15	to	25
Fracture, metatarsal bone, one	20	to	25
Dilating urethral stricture	10	to	15
Removal chalazion	10	to	15
Cystoscopy	20	to	25
Cystoscopy with biopsy	25	to	30

With regard to the 515 items which would have been eliminated from the original fee schedule, it was agreed that they would be "put on the shelf" for the time being. They will serve as a guide to the D.V.A. when and if any work is authorized within that field.

It was the feeling of the Committee that the 438 items included in the revised schedule covered the majority of cases which would be authorized by the D.V.A. to be done by the returned soldier's doctor of choice.

With respect to the reduction of the fee for first office call and first house call, it was felt by your Tariff Committee that the original suggestion of $3.00 and $4.00 made adequate provision for the payment of the filing of the necessary reports. With the reduction of these fees, it became apparent that no provision was made for payment for reports. The joint committee proposes in the revised schedule that a fee of $1.00 be paid by D.V.A. for each report asked for from the attending physician.

The question of utilization by the veterans of the doctor of his choice, be he general practitioner or specialist, was discussed at considerable length, and the following two statements finally agreed upon for inclusion in the regulations:

1. Specialist fees will be paid where the patient is referred to a specialist by a general practitioner, or where the patient goes directly to a specialist and the Department considers, following receipt of case report, that the services of a specialist were necessary;

2. Specialist fees will only be paid when a specialist continues treatment which could not be properly carried out by the doctor referring the patient.

When the labours of the Committee had been completed, it was agreed that the D.V.A. representatives would provide to the Executive Committee copies of the revised schedule and instructions as were agreed upon in conference. These copies will either be sent directly to the Committee at Banff or will be brought out by Dr. Warner who proposes to be in Banff when the Executive Committee is sitting and thus be available for consultation with the Committee.

Your Committee desires to record its appreciation of the complete degree of co-operation and understanding which manifested itself throughout the two days' deliberations between the three medical representatives of D.V.A. and your Committee.

Approved.

Following discussion of the Supplementary Report of the Special Committee *re* Medical Care of Veterans, the following resolution was passed:

"Whereas the question of the use of a general practitioners' schedule and a specialists' schedule of fees, or the use of a general schedule as the official policy of the C.M.A. is a matter of fundamental importance as a broad principle;

And whereas this Council has embarked on the establishment of a fee schedule for the D.V.A. under such emergency stress of time that adequate opportunity for the study of the principle involved could be taken only at considerable disadvantage to the forwarding of the D.V.A. scheme, the launching of which we feel is demanded both by the veterans and the profession;

Therefore, be it resolved that the adoption of the multiple scheme is done without prejudice and that the question be referred to the Divisions for study and that a special committee be set up to correlate and report the results at a later date."

Some members of General Council expressed concern with regard to a report that hospital accommodation for veterans would vary according to the rank held by the veteran while a member of the active forces, that is, public ward rates for ex-privates and ex-N.C.O.'s; semi-private accommodation for ex-Warrant Officers to Captains, and private accommodation for all personnel of the rank of Major and upward. It

was pointed out that such a policy would nullify the freedom of choice of Doctor in a great many cases. Members of Council were firmly of the opinion that veterans under the family doctor scheme should be afforded free choice of doctor and hospital and that, in hospitalization, accommodation should be defined in such a way as to ensure that the attending doctor be remunerated for his services.

Members of Council were assured by officials of the Department that veterans will be admitted to hospitals under conditions which will allow them to be treated by their own family doctor.

REPORT OF THE HONORARY TREASURER

Mr. Chairman and Members of General Council:—

36. I have the honour to present the report of the Honorary Treasurer for the year 1945. Certified financial statements from Messrs. McDonald, Currie & Company, Chartered Accountants, Montreal, are attached. Mr. Dignam's audited statements of the Toronto office accounts have been incorporated in the statements.

37. It is a pleasure to report that the year has been a successful one from the financial point of view. This is particularly gratifying when we consider that costs have shown a considerable advance over preceding years. The main increases in income have been from membership fees, subscriptions to the *Journal* and advertising revenue. On the other hand printing costs, added travelling expenses in connection with Health Insurance and the Department of Veterans' Affairs Tariff Committee, and the honorarium of our consultant in Medical Economics have raised our expenditures to the record sum of $103,371.95. Our surplus for the year, however, amounted to $16,267.76.

38. Our investment income shows a rise of $998.20 due in part to the payment of back interest on the Alberta debentures.

39. The surplus account now amounts to $168,335.53 of which $145,713.67 is the book value of our investment portfolio. (Market value, December 31, 1945, approximately $148,800.00).

Rehabilitation Grant

40. In June, 1945, the Department of Veterans' Affairs sent a cheque for $20,000.00 to help defray expenses in connection with counselling service to returned medical officers. As the C.M.P.A.B. remained in existence throughout the year, no calls have been made on this grant, and it has been invested temporarily in 9th Victory Loan Bonds.

Department of Hospital Service

41. As of December 31, 1945, your Association ceased to have connection with this department and the final audited statement is attached. Arrangements are being made regarding the disposition of (*a*) the cash balance at the credit of the department, (*b*) the Blackader Library and (*c*) the Blackader Library Fund.

Investments

42. New investments to the extent of $11,500.00 of our surplus funds were made in the 8th and 9th Victory Loans.

On the advice of the Royal Trust Company, our financial advisers, proceeds arising from the redemption of certain debentures were reinvested.

General Funds

43. $5,000.00 Province of Alberta 4½% debentures were redeemed at par (U.S. funds) and were replaced by 9th Victory Loan 3% Bonds due 1966, with a capital profit of $687.50.

$1,000.00 Province of Ontario 3% debentures 1949 were called for redemption at par and were replaced by a corresponding amount of 9th Victory Loan bonds with a capital profit of $5.00.

Trust Funds

The Osler Scholarship Fund

44. $700.00 8th Victory Loan, 3%, due October 1, 1963 were bought at par. Of this amount $500.00 was capital and $200.00 accrued revenue.

Special Grant Funds

The Cancer Fund

45. $2,000.00 8th Victory Loan, 3%, due October 1, 1963 were purchased at par from accrued revenues in the Fund.

Rehabilitation Fund for Medical Officers

46. $20,000.00 9th Victory Loan bonds, 3%, 1966, were bought at par as a temporary investment for this fund.

All of which is respectfully submitted,

D. SCLATER LEWIS,
Honorary Treasurer.

Approved.

47. STATEMENT No. 1

BALANCE SHEET AS AT 31st DECEMBER, 1945

GENERAL FUNDS: ASSETS		
Cash on Hand	$ 25.00	
Cash in Bank:		
Montreal	$16,758.87	
Toronto	11.67	
Annual Meeting	2,103.83	
	18,874.37	
		$18,899.37
ACCOUNTS RECEIVABLE:		
Advertising and *Journal* Sales	$1,250.51	
Reprints	455.93	
Trust Funds and Special Grants	383.34	
Deposit—Trans Canada Air Lines	425.00	
	$ 2,514.78	
INVESTMENTS:		
At Book Value, Schedule No. 1	$145,713.67	
Furniture and Equipment—		
Less Depreciation	1,207.71	
		168,335.53
Trust Funds—Statement No. 4		41,130.87
Special Grant Funds—Statement No. 5		36,337.13
		$245,803.53

GENERAL FUNDS: LIABILITIES		
Accounts Payable	$ 169.76	
Revenue Received in Advance:		
Prepaid Membership Fees, 1946	$ 64.50	
Prepaid Subscriptions, 1946	969.54	
		1,034.04
SURPLUS ACCOUNT:		
Balance at Credit —31st December, 1944	$150,171.47	
Add: Profit on Sale of Investments.	692.50	
Excess of Revenue over Expenditure for the Year	16,267.76	
	167,131.73	
		$168,335.53
Trusts		41,130.87
Special Grants		36,337.13
		$245,803.53

AUDITORS' REPORT

Montreal, 7th February, 1946.

We have examined the books and accounts of the Canadian Medical Association for the year ended 31st December, 1945, and we have obtained all the information and explanations which we have required.

The receipts and disbursements of the General Secretary in Toronto, as shown on a statement certified to by Mr. Dignam as Auditor, have been incorporated in the books.

We report that, in our opinion, the above Balance Sheet and related Statement of Revenue and Expenditure are properly drawn up so as to exhibit a true and correct view of the state of the Association's affairs and the results of the operations for the year, according to the best of our information and the explanations given to us and as shown by the books.

(Signed) McDONALD, CURRIE & Co.,
Chartered Accountants.

48. STATEMENT No. 2

STATEMENT OF REVENUE AND EXPENDITURE FOR THE PERIOD ENDED 31st DECEMBER, 1945

REVENUE		EXPENDITURE		
Membership Fees	$38,685.35	*Journal*, Printing, Etc.:		
Subscriptions	8,673.56	Agents' Commissions	$ 7,027.52	
Advertising	56,066.74	Illustrations	1,217.93	
Sundry *Journal* Sales	471.46	Printing	39,456.04	
Special Reprints	1,324.73			$47,701.49
Annual Meeting, as per Statement No. 3	9,374.61	Salaries:		
Revenue from Investment and Bank Interest	5,043.26	General Secretary's Office, Including Expense Allowance	$16,834.81	
		Montreal Office, Editorial, including Honoraria to Divisional Representatives and Honoraria for Abstracts and Special Contributions	15,355.53	
		Unemployment Insurance	63.99	
				32,254.33
		Travelling:		
		Executive Committee	$5,280.54	
		Transcontinental Tour—President and General Secretary	1,553.67	
		Post-Graduate Teams	1,387.83	
		Medical Secretaries' Conference	382.09	
		General Secretary	92.70	
		Tariff Committee on Department of Veterans' Affairs	872.72	
		Committee on Laboratory Technicians	45.60	
				9,615.15
		Health Insurance:		
		Salaries	$5,655.44	
		Travelling	2,066.95	
		Legal Consultations	150.00	
		Pamphlet "The Development of Health Insurance in Canada"	618.53	
		General	414.30	
				8,905.22
		Administration Expenses:		
		Audit Fees	$ 425.00	
		Depreciation of Furniture and Fixtures	134.19	
		Discount and Exchange	447.74	
		General Expenses	729.37	
		Postage	1,014.10	
		Royal Trust Company, Trustee Fees	242.57	
		Stationery and Printing	1,212.33	
		Telephone and Telegraph	648.67	
		Bad Debts	41.79	
				4,895.76
		Excess of Revenue over Expenditure for the Year		16,267.76
	$119,639.71			$119,639.71

STATEMENT No. 3

ANNUAL MEETING IN MONTREAL, JUNE, 1945, STATEMENT OF REVENUE AND EXPENDITURE

49. REVENUE			50. EXPENDITURE		
Exhibit Space		$14,400.00	Travelling Expenses		$ 648.74
Luncheon		924.00	Badges:—		
Bank Interest and Premium on United States Funds		82.36	Past Presidents and Senior Members	$106.25	
			Registration	187.92	
			Printing		1,624.57
			Mount Royal Hotel		2,228.28
			Orchestra		175.00
			Rental of View Boxes and Lanterns, Operator's Wages		370.54
			Telephone and Telegrams		103.43
			Watchmen		80.00
			Clerical Assistance		378.00
			Medical Secretaries' Dinner		72.76
			Sundries		56.26
					$6,031.75
		$15,406.36	*Excess of Revenue over Expenditure*		$9,374.61

STATEMENT No. 4

TRUST FUNDS— BALANCE SHEET AS AT 31ST DECEMBER, 1945

51. ASSETS	*Osler Oration Fund*	*Lister Club Fund*	*Osler Scholarship Fund*	*Blackader Lecture Fund*	*Frederick Newton Gisborne Starr Memorial Award*	*Blackader Library of the Hospital Service Department*	*Canadian Radiological Society Library Fund*	*Total*
Capital Assets:								
Accounts Receivable	.....	.....	$ 25.92	$ 15.14	.....	.....	.....	$ 41.06
Investments	$6,050.00	$6,585.00	12,942.49	5,514.03	$1,000.00	.....	.....	32,091.52
	$6,050.00	$6,585.00	$12,968.41	$5,529.17	$1,000.00			$32,132.58
Revenue Assets:								
Cash in Bank	$1,186.90	$ 332.43	$ 523.02	$ 460.72	$44.47	$764.59	$172.66	$3,484.79
Accounts Receivable	.....	.....	13.50	.....	.....	.....	.....	13.50
Investments	100.00	1,100.00	3,600.00	700.00	.....	.....	.....	5,500.00
	$1,286.90	$1,432.43	$4,136.52	$1,160.72	$44.47	$764.59	$172.66	$8,998.29
Total								$41,130.87
52. LIABILITIES								
Capital Funds:								
Balance— 31st December, 1944	$5,637.50	$6,585.00	$12,968.41	$5,478.87	$1,000.00	.....	.....	$31,669.78
Profit on Sale of Investments	412.50	.....	.....	.....	.....	.....	.....	412.50
Amount transferred from Revenue Funds	.....	.....	.....	50.30	.....	.....	.....	50.30
	$6,050.00	$6,585.00	$12,968.41	$5,529.17	$1,000.00	.....	.....	$32,132.58
Revenue Funds:								
Accounts Payable	$ 13.50	$ 333.56	.....	.....	.....	$ 13.56	.....	$ 360.62
Accumulated Revenue:—								
Balance—31st December, 1944	167.85	1,239.80	$3,672.16	$841.75	$ *3.53*	819.18	$199.39	6,936.60
Excess or *Deficiency* of Revenue for the Year	1,105.55	*140.93*	464.36	318.97	48.00	*68.15*	*26.73*	1,701.07
Balance—31st December, 1945	$1,273.40	$1,098.87	$4,136.52	$1,160.72	$44.47	$751.03	$172.66	$8,637.67
	$1,286.90	$1,432.43	$4,136.52	$1,160.72	$44.47	$764.59	$172.66	$8,998.29
Total								$41,130.87

STATEMENT No. 5

SPECIAL GRANT FUNDS—BALANCE SHEET AS AT 31ST DECEMBER, 1945

53. ASSETS	*Department of Hospital Service*	*Department of Publicity and Health Education*	*Cancer Fund*	*Committee on Nutrition*	*Rehabilitation Fund for Medical Officers*	*Total*
Cash in Bank	$1,112.26	$1,011.89	$ 1,546.98	$43.40	$ 32.12	$ 3,746.65
Investment in Dominion of Canada War Loan Bonds	.....	.....	12,100.00	.....	20,000.00	32,100.00
Equipment less Depreciation	489.48	1.00	.....	.....	.....	490.48
	$1,601.74	$1,012.89	$13,646.98	$43.40	$20,032.12	$36,337.13
54. LIABILITIES						
Accounts Payable	$ 36.22	.....	.14	.....	.....	$ 36.36
Special Grant Funds:						
Balance—December 31st, 1944	1,754.01	$1,205.30	13,332.79	$43.13	.....	16,335.23
Excess or *Deficiency* of Revenue for the Year	*188.49*	*192.41*	314.05	.27	20,032.12	19,965.54
Balance—December 31st, 1945	$1,565.52	$1,012.89	$13,646.84	$43.40	$20,032.12	$36,300.77
	$1,601.74	$1,012.89	$13,646.98	$43.40	$20,032.12	$36,337.13

SCHEDULE No. 1

SCHEDULE OF INVESTMENTS AS AT 31ST DECEMBER, 1945

55. GENERAL FUND

	Par Value	*Book Value*
Dominion of Canada 3/57	$21,000.00	$21,000.00
Dominion of Canada 3/59	10,000.00	10,000.00
Dominion of Canada 3/60	55,000.00	55,000.00
Dominion of Canada 3/62	9,000.00	9,000.00
Dominion of Canada 3/63	10,000.00	10,000.00
Dominion of Canada 3/66	8,000.00	8,000.00
Jewish Hospital Campaign Committee Incorporated of Montreal 5/46	5,000.00	4,950.00
City of Montreal 1956—4½/46—3½ thereafter	1,000.00	975.00
City of Montreal 1958—4½/47—3½ thereafter	2,000.00	1,856.20
City of Montreal 1970—5/54—3¾ thereafter	2,000.00	2,020.00
City of Montreal 1971—5/54—3¾ thereafter	3,000.00	3,030.00
Province of Nova Scotia 3/52	10,000.00	9,900.00
Province of Ontario 3/50	9,000.00	8,982.47
Ritz-Carlton Hotel Co. 1st Mortgage 2½/73 and $130.00 Non-Interest Bearing Certificates of Indebtedness	1,000.00	1,000.00
	$146,000.00	$145,713.67

Approximate Market Value $148,800.00

TRUST FUNDS

56. Osler Oration Fund:

CAPITAL

	Par Value	*Book Value*
Dominion of Canada 3/57	$ 100.00	$ 100.00
Dominion of Canada 3/60	2,600.00	2,600.00
Dominion of Canada 3/62	50.00	50.00
Dominion of Canada 3/66	3,300.00	3,300.00
	$6,050.00	$6,050.00

Approximate Market Value $6,111.00

REVENUE

Dominion of Canada 3/62	$100.00	$100.00

Approximate Market Value $101.00

57. Lister Club Fund:

CAPITAL

	Par Value	*Book Value*
Dominion of Canada 3/60	$5,500.00	$5,500.00
Dominion of Canada 3/62	100.00	100.00
Province of Quebec 4½/63	1,000.00	985.00
	$6,600.00	$6,585.00

Approximate Market Value $6,871.00

REVENUE

Dominion of Canada 3/57	$800.00	$800.00
Dominion of Canada 3/62	300.00	300.00
	$1,100.00	$1,100.00

Approximate Market Value $1,119.00

58. Osler Scholarship Fund:

CAPITAL

	Par Value	*Book Value*
Dominion of Canada 3/58.....	$ 2,000.00	$ 1,992.49
Dominion of Canada 3/60.....	10,400.00	10,400.00
Dominion of Canada 3/62.....	50.00	50.00
Dominion of Canada 3/63.....	500.00	500.00
	$12,950.00	$12,942.49

Approximate Market Value $13,099.00

REVENUE

Dominion of Canada 3/57.....	$ 900.00	$ 900.00
Dominion of Canada 3/60.....	2,000.00	2,000.00
Dominion of Canada 3/62.....	500.00	500.00
Dominion of Canada 3/63.....	200.00	200.00
	$3,600.00	$3,600.00

Approximate Market Value $3,645.00

59. Blackader Lecture Fund:

CAPITAL

Province of Alberta 4½/56.....	$1,000.00	$1,000.30
Dominion of Canada 3/58.....	3,000.00	2,988.73
Dominion of Canada 3/60.....	700.00	700.00
Dominion of Canada 4½/57....	200.00	204.00
City of Drummondville 4/56....	500.00	517.50
City of Drummondville 4/62....	100.00	103.50
	$5,500.00	$5,514.03

Approximate Market Value $5,571.00

REVENUE

	Par Value	*Book Value*
Dominion of Canada 3/57.....	$400.00	$400.00
Dominion of Canada 3/62.....	300.00	300.00
	$700.00	$700.00

Approximate Market Value $711.00

Frederick Newton Gisborne Starr Memorial Award:

CAPITAL

Dominion of Canada 3/59.....	$1,000.00	$1,000.00

Approximate Market Value $1,020.00

SPECIAL GRANT FUNDS

60. Cancer Fund:

Dominion of Canada 3/60.....	$10,100.00	$10,100.00
Dominion of Canada 3/63.....	2,000.00	2,000.00
	$12,100.00	$12,100.00

Approximate Market Value $12,322.00

Rehabilitation Fund for Medical Officers:

Dominion of Canada 3/66.....	$20,000.00	$20,000.00

Approximate Market Value $20,200.00

STATEMENT No. 1

61. REHABILITATION FUND FOR MEDICAL OFFICERS

BALANCE SHEET AS AT 31ST DECEMBER, 1945

ASSETS

Cash in Bank.....	$ 32.12
Investment in Dominion of Canada War Loan Bonds (Approximate Market Value $20,200.00).....	20,000.00
	$20,032.12

LIABILITIES

Surplus Account:	
Excess of Revenue over Expenditure for the period.....	$20,032.12

AUDITORS' REPORT

We have examined the books and accounts of the Rehabilitation Fund for Medical Officers of the Canadian Medical Association for the period ended 31st December, 1945, and we have obtained all the information and explanations which we have required.

We report that, in our opinion, the above Balance Sheet and related Statement of Revenue and Expenditure are properly drawn up so as to exhibit a true and correct view of the state of the Fund's affairs and the results of the operations for the period, according to the best of our information and the explanations given to us and as shown by the books.

(Signed) McDONALD, CURRIE & Co.,
Chartered Accountants.

Montreal, 7th February, 1946.

STATEMENT No. 2

62. STATEMENT OF REVENUE AND EXPENDITURE FOR THE PERIOD 31ST JULY, 1945 TO 31ST DECEMBER, 1945

REVENUE		EXPENDITURE	
Grant from Department of Veterans' Affairs —31st July, 1945	$20,000.00	*Excess of Revenue over Expenditure for the period*—transferred to Surplus Account	$20,032.12
Bank Interest	32.12		
	$20,032.12		$20,032.12

STATEMENT No. 1

63. DEPARTMENT OF HOSPITAL SERVICE

BALANCE SHEET AS AT 31ST DECEMBER, 1945

ASSETS			LIABILITIES		
Cash in Bank		$1,112.26	Accounts payable		$ 36.22
Equipment	$543.86		Surplus Account:		
Deduct—Depreciation for Year	54.38		Balance at Credit, 31st December 1944	$1,754.01	
		489.48	*Deduct*—Excess of Expenditure over Revenue for the Year	188.49	
					$1,565.52
		$1,601.74			$1,601.74

AUDITORS' REPORT

We have examined the books and accounts of the Department of Hospital Service of the Canadian Medical Association for the year ended 31st December, 1945, and we have obtained all the information and explanations which we have required.

We report that, in our opinion, the above Balance Sheet and related Statement of Revenue and Expenditure are properly drawn up so as to exhibit a true and correct view of the state of the Department's affairs and the results of the operations for the year, according to the best of our information and the explanations given to us and as shown by the books.

(Signed) McDONALD, CURRIE & Co.,
Chartered Accountants.

Montreal, 7th February, 1946.

STATEMENT No. 2

64. STATEMENT OF REVENUE AND EXPENDITURE FOR YEAR ENDED 31ST DECEMBER, 1945

REVENUE			EXPENDITURE	
Grant—Sun Life Assurance Co. of Canada	$11,000.00		Salaries (including Expense Allowance)	$9,513.12
Bank Interest	9.12		Travelling Expenses	858.90
		$11,009.12	Pamphlet—Planning and Construction of the General Hospital	243.81
Excess of Expenditure over Revenue for the Year—transferred to Surplus Account		188.49	Printing, Stationery, Literature and Office Supplies	372.05
			Postage	107.16
			Telephone and Telegrams	10.12
			General Expenses	24.03
			Unemployment Insurance	14.04
			Depreciation of Equipment	54.38
		$11,197.61		$11,197.61

STATEMENT No. 1

65. CANCER FUND

BALANCE SHEET AS AT 31ST DECEMBER, 1945

ASSETS		LIABILITIES		
Cash in Bank	$ 1,546.98	Accounts Payable		$ .14
Investment in Dominion of Canada War Loan Bonds (Approximate Market Value —$12,322.00)	12,100.00	Surplus Account:		
		Balance at Credit, 31st December, 1944	$13,332.79	
		Add—Excess of Revenue over Expenditure for the Year	314.05	
				13,646.84
	$13,646.98			$13,646.98

AUDITORS' REPORT

We have examined the books and accounts of the Cancer Fund of the Canadian Medical Association for the year ended 31st December, 1945, and we have obtained all the information and explanations which we have required.

We report that, in our opinion, the above Balance Sheet and related Statement of Revenue and Expenditure are properly drawn up so as to exhibit a true and correct view of the state of the Fund's affairs and the results of the operations for the year, according to the best of our information and the explanations given to us and as shown by the books.

(Signed) McDONALD, CURRIE & Co.,
Chartered Accountants.

Montreal, 7th February, 1946.

STATEMENT No. 2

66. STATEMENT OF REVENUE AND EXPENDITURE FOR YEAR ENDED 31ST DECEMBER, 1945

REVENUE		EXPENDITURE		
Grant from Board of Trustees of King George V Jubilee Cancer Fund for Canada	$7,500.00	Canadian Society for the Control of Cancer	$7,500.00	
Bank Interest	10.37	Royal Trust Company, Fees	13.12	
Bond Interest	328.00	Bank Charges	11.20	
				$7,524.32
		Excess of Revenue over Expenditure for the Year —transferred to Surplus Account		314.05
	$7,838.37			$7,838.37

Approved.

REPORT OF THE MANAGING EDITOR

Mr. Chairman and Members of General Council:—

67. I have the honour to present the following report. The advertising revenues of the *Journal* have shown the considerable rise of $5,791.22 due in part to a further increase in our advertising rates and in part to a greater amount of advertising material in the *Journal*. Subscriptions have increased $1,685.05. Printing costs, however, show a rise of $5,394.44, which gives us a net increase of slightly over $2,000.00 in the revenue of the *Journal*. This increase will be absorbed completely in the increased costs of supplying the *Journal* to returned medical officers for the time during which they are given complimentary membership in the Association.

68. Problems of paper supply and the relation between the amount of reading matter and advertising space, have also added to our difficulties during the year.

69. Our assistant Managing Editor, Mrs. Lang, resigned during the year. She had been a faithful and efficient servant of the Association for more than 30 years, and due editorial notice has been taken of her resignation. The Executive Committee has granted her an allowance of $100.00 a month in recognition of her services to the *Journal* and the Association.

All of which is respectfully submitted,

D. SCLATER LEWIS,
Managing Editor.

Approved.

REPORT OF THE EDITOR

Mr. Chairman and Members of General Council:—

I shall make a short reference to the work of the *Journal* during the war period.

70. (1) *The Supply of Material.*—Contrary to our fears the supply of papers submitted for publication remained sufficient to maintain regular issues of only slightly less size than those of the immediate pre-war years. Efforts were made to encourage men in the services to contribute, and whilst this source was not as fruitful as I had hoped it still provided valuable material, some of which will be indispensable to the military historian. It was recognized that military requirements necessarily limited the amount of material to be published.

71. Fortunately our Association was able to continue scientific sessions at its annual meetings, with the exception of 1943. If additional proof of the value of these sessions were needed it was abundantly provided by the insistence on their being continued even under the heavy and imperative demands by the war on our profession. Indeed, their direct contribution to the medical aspects of the war was unquestionable. The tendency towards round table discussions has somewhat reduced the number of papers for publication. There are difficulties in reporting these discussions, but with planning it can be done, and I would welcome the material from them.

72. It was decided to send an *Overseas Bulletin* to medical men on active service, chiefly to keep them in touch with the problem of medical economics in Canada. Six issues altogether were sent in the course of three years, and although there was much difficulty at first in arranging for their distribution, we believe that the *Bulletins* were useful.

At the end of the war it was decided to give each medical officer one year's free subscription to the *Journal* from the date of his demobilization.

73. (2) *Increase in Number of Journals Printed.*—The number of journals printed each month has shown a steady increase during the last five years

	1941	1942	1943	1944	1945
Total number of pages	2,070	2,168	2,045	2,341	2,500
Advertising pages ..	840	885	946	1,113	1,217
Average number of journals per month	6,016	6,897	7,200	7,800	8,208

As the table shows, the average monthly printing in 1941 was 6,016, whilst in 1945 it was 8,208, with steady intervening annual increments. For the first three months of this year we have printed an average of 9,100 per month, or nearly a thousand more than last year's average.

This increase is due partly to (*a*) the granting of the one year's subscription to demobilized medical officers; and (*b*) an increase in ordinary membership. There will naturally be a still further increase this year as more men are demobilized and there may also be an increase in ordinary subscriptions.

74. There has also been an increase in the volume of advertising. Since 1941 advertising has increased each year, from 840 pages in 1941 to 1,217 in 1945.

Both these developments require consideration. We are informed by our printers that for the current year the quota of paper available to them for the *Journal* will be the same as for 1945, *i.e.* 48.1 tons. They warn us therefore that the supply will not permit of much larger issues. The possibility of obtaining more paper has been explored by the General Secretary, and he has obtained the tentative grant of an additional ton per month, if needed, and this may be enough. The advertising has nearly reached the maximum amount permissible under our postal rates. These provide that it shall not exceed 55% of the total volume of an issue, which in any case would not be desirable. On the other hand, if the number of pages of reading matter were to be increased so as to preserve the proportion we would again be faced with the limitation of paper supplies. For the present therefore we shall accept fresh advertising, only within the limits of our present material.

75. (3) *The Quality of Material.*—Occasionally the material appearing in the *Journal* is criticized as being too specialized for men in general practice. The answer is that the contents of the *Journal* depend almost entirely on what is spontaneously contributed. Efforts are also made to get material from authoritative sources, but always with emphasis on the general aspects of the subject. No good material is ever refused, unless it is too sharply specialized to be of interest to more than a very few. It is natural that those in large centres should have certain advantages in preparing papers, and also that they should tend towards the specialties, but some of the most interesting and valuable contributions have come from men in country practice. I am only too glad to encourage this source of medical material.

76. (4) *Exchange of Journals.*—With the cessation of the war we have been glad to renew the exchange of our *Journal* with those of other countries, particularly in Europe. We have already been asked to do this by France, Belgium, Sweden and Greece.

77. The editorial board has approved of a new form of cover, which displays the contents and is an improvement in many ways.

78. Dr. A. L. Johnson has been appointed as editorial assistant and is working regularly.

All of which is respectfully submitted.

H. E. MACDERMOT,
Editor.

Approved.

REPORT OF THE CONSULTANT IN MEDICAL ECONOMICS

Mr. Chairman and Members of General Council:—

79. Several reasons contributed to my decision to accept, although with considerable reluctance, this position. The conviction has grown upon many of us, that our profession is faced with problems of very great importance which are going to call for solution during this period of reconstruction in Canada. It was very difficult to decide how acute some of these problems actually were, and even to ascertain their exact nature. It was obvious, however, that some fundamental changes were likely to occur in the practice of our profession in various parts of Canada in the near future. It was also obvious that the Canadian Medical Association had become a closely fused entity and that the interests of the whole profession were such that anything which affected our members anywhere would, of necessity, have a definite if not profound effect on the whole profession in Canada.

80. Your Executive Committee was convinced that at this time they should spare no effort to keep their membership in the various Divisions in close touch with developments elsewhere. They felt that the note should be sounded and emphasized that we, all of us, were faced with similar interests and similar problems and that a common strength could be developed or that, conversely, weakness in one province might make us all more vulnerable. It was because of these convictions that this office was created.

81. As your Consultant I have had the opportunity and the responsibility, as well as the privilege, of meeting with our members and committees in the various provinces and of discussing with them their own particular problems and the problems which we all share.

82. Committees in all the provinces of Canada except one have during the past few months invited your Consultant to meet with them. I want at this time to express my personal appreciation of the courtesy, the co-operation and the hospitality which have been extended to me everywhere. It has been of the highest order.

You would have been thrilled and reasurred if you could have attended these sessions and have seen the enthusiastic interest and the energy with which our men in the different parts of the country are facing their problems. You would have felt, as I have felt, that the health services of Canada will be well served if our various committees have an opportunity of assisting in the development of the service in these areas. It is true that the dissemination of information regarding immediate and future developments—and consequently the individual interest—varies from province to province. That is natural.

83. Discussions in Prince Edward Island, New Brunswick and Nova Scotia took place in November. Reports of the action taken at that time in those provinces, and later in Ontario and in the western provinces, have been presented in the report of the Committee on Economics. Because of the more immediate nature of the problems which have developed in Saskatchewan, Manitoba, Alberta and to a lesser extent in British Columbia, it was necessary to spend more time in those provinces than in the east. This was particularly true with regard to Saskatchewan, in which province a most active and energetic development is being planned. We owe a great deal to the committees which are keenly studying the situation there and, at great personal inconvenience,

are standing for sound development. As has been said elsewhere in these reports, the Government there has shown a real desire to co-operate with those who must provide the services.

84. In addition to problems of a local nature to which reference is made elsewhere, two problems of a general nature required consideration in all provinces. The first had to do with the so-called family doctor plan of the Department of Veterans' Affairs. This proposal has commanded the interest and sympathetic study of our men everywhere. There is a general desire to help and it is hoped that the difficulties which have been encountered in trying to set up this plan and which are discussed elsewhere in these reports, will soon be eliminated.

85. The second had to do with the possible introduction in one or more provinces of some form of health insurance or subsidized plan for providing medical care particularly in rural areas. This of course became a more active problem when the Dominion-Provincial conference met last August. No province in Canada has seen fit to, or perhaps been able to, introduce a workable plan of health insurance. The Federal proposals, formally received last August, to provide generous financial assistance for this purpose made the issue again one for immediate consideration.

86. Our committees have studied the problem as it related to their own provinces and have made proposals to the various provincial governments. In general these proposals emphasized the following points:

1. That the grant for "Planning and Organization" should be made available to the provinces without the provinces deciding in advance as to the exact nature of the service which they would think it wise or possible to introduce in their own area.
2. That there should not be too great rigidity in outlining the plan by the Federal authorities. The provinces might well be allowed to introduce benefits in whatever order they thought wisest for their own province.
3. That, inasmuch as the amount of the Federal grant for the various benefits was based upon an estimate the accuracy of which could not be presently known, provision should be included in the proposed Federal grants to pay part of the amount by which provincial expenditure for any specific benefit overran the estimate.

87. At the time of writing it is still uncertain whether Federal grants to assist the provinces to introduce plans of health insurance will become available. The prairie provinces have each introduced legislation designed to use some or all of these grants if agreement is reached at Ottawa along proposed lines. This legislation is probably not in its final form in any of the provinces concerned. The extent and nature of our problems and their urgency are of course very closely tied up with the results of this conference. By the time this report is read something more definite should be known.

88. Your Consultant and his advisers consider that in the changes ahead, whatever they may be or whenever they may come, in relation to any form of health insurance, the Canadian Medical Association should seek to co-operate with the governmental planning authorities to the end that they may as far as possible guide the developments along lines which are in the best interests of a sound system of health care for the people of Canada. To do this will require constant care and intimate and energetic and perhaps immediate study. The solutions arrived at may vary in different parts of Canada but the fundamental principles of a sound service must be retained or in the final analysis it will be the welfare of the people that will suffer. Sound service rather than expediency must be the ultimate criterion.

89. Such co-operation and guidance as we can give should be at the disposal of governments. The whole problem of health services needs our guidance and we should seek without apology to advise whenever opportunity arises. We, a profession wholly engaged in health work, should be best qualified to provide answers to the many questions arising in the health field. To withhold such advice would be to do less than our duty.

90. While it would appear that any developments that may occur will be through the agency of provincial legislation, there should be some degree of uniformity at least, in regard to the standard of services provided from province to province. If health insurance grants are to be paid by the Federal Government they will be paid only to assist a plan of which the Federal authorities approve. That necessary approval may provide an agency through which some degree of uniformity can be secured. It is in the interest of sound service that that power of approval be wisely used.

91. At the same time every effort should be made to strengthen our organization, for it is far from certain to what extent developments may proceed along lines which will make it possible for us to continue co-operation. You, and I, would deeply regret being forced, in the public interest, to withhold our support. But if it should develop in any area that political expediency becomes a stronger factor in determining policy, than a desire for a sound service, it may be our duty to take a firm stand. And if that should unfortunately ever become necessary, a strong, united organization is a fundamental necessity.

92. In conclusion, it is evident that this body should be prepared to face a most active period in the months and years immediately ahead. Planning and discussions and developments, not nearly all of which are dependent upon Federal assistance, are taking place in many if not all of the provinces. It is easier to influence plans before they are definitely crystallized than it is to alter them after governments have announced a policy. It is fortunate that so many of our committees are aware of the situation and are carrying their responsibilities so well at this time.

All of which is respectfully submitted,

A. E. ARCHER,
Consultant in Medical Economics.

Approved.

REPORT OF THE DEPARTMENT OF CANCER CONTROL

Mr. Chairman and Members of General Council:—

93. The chief activity of the Department of Cancer Control has been an attempt to deal with the perennial difficult of deciding on the best use to which to put the King George V Silver Jubilee Cancer Fund. The Trustees of this Fund look to the Department of Cancer Control of the Canadian Medical Association for advice as to the disposal of the monies in the Fund.

94. In the fall of 1945 the chairman of your Department received a letter from Dr. G. Brock Chisholm, secretary of the Fund, asking for a decision as to the advisability of expending the Fund in whole or in large part at an early date. A special meeting of the nucleus committee was called for November 16th, 1945, to which Dr. Chisholm was invited. At this meeting the entire question was canvassed with care. It was felt that to dissipate the Fund quickly and completely was a simple and easy matter. This, however, was considered undesirable, because once the Fund is gone there is no machinery by which it could be replenished. Moreover the amount of money involved is not large enough to make a real impression on a problem so vast as the control of cancer.

95. It was pointed out that there at present exists an organization in Canada which, if properly developed, might not only replenish but eventually perpetuate the Fund. This organization is the Canadian Society for the Control of Cancer, now the Canadian Cancer Society. The American Cancer Society, which has been established for well over twenty years, has raised great sums of money which have been devoted to research projects and other aspects of the fight against cancer. The Canadian Society, established shortly before the war, has never been developed on a scale to make it really effective. A Dominion-wide reorganization is underway at present, but funds are imperatively needed for this work.

96. When these facts were presented to your committee it was felt that the wisest course of action would be to recommend to the Trustees of the Fund that a large sum of money be donated to the Canadian Cancer Society, which it was hoped would play the part of a catalytic agent, and, by enlisting the interest of the public, would cause the sum to be increased, or indeed multiplied several times over. The following resolution was therefore moved, seconded and carried:

> "That this Board of Directors go on record as recommending to the Trustees of the King George V Silver Jubilee Cancer Fund for Canada that, for the coming year, they allot to the Canadian Cancer Society the sum of $100,000; and for the succeeding four years, $50,000 annually;
> that the Canadian Cancer Society be requested to submit to the Trustees a complete program of its projected activities for this five year period; and
> that the Canadian Cancer Society endeavour to arrange for the reimbursement of the King George V Silver Jubilee Cancer Fund of the amounts advanced."

97. Requests have been received for a new and revised edition of the Handbook on Cancer originally published by this Department in 1938. So far no action has been taken with respect to this matter.

All of which is respectfully submitted.

WILLIAM BOYD,
Chairman.

Approved.

REPORT OF THE COMMITTEE ON MEMBERSHIP

Mr. Chairman and Members of General Council:—

98. Your Membership Committee begs to report as follows:

Membership during the year has shown a steady increase in practically all Provinces.

Your Committee wishes to thank the Executive and General Council for the adoption of its recommendation regarding returning service men. We feel that this is more than compensated for by the very evident interest which returned men, all across Canada, are manifesting in the affairs of the Association.

99. Since our last Annual Meeting, Saskatchewan has joined New Brunswick and Alberta in adopting an all-inclusive fee, so that they now show a 100% enrolment.

100. As a stimulus to added membership, your Chairman, at the beginning of the year, addressed a personal letter to every doctor practising in Canada, who was not, during 1945, a member of the Association.

101. In conclusion, we feel that if the future aim of the Association—100% membership—is to be attained, it can only be done by the aggressive personal canvass of non-members by the local Membership Committee in each Province.

All of which is respectfully submitted.

W. G. BEATON,
Chairman.

Approved.

REPORT OF THE COMMITTEE ON PHARMACY

Mr. Chairman and Members of General Council:—

102. The Committee suffered a grievous loss in the sudden death in August, 1945, of its Chairman, Prof. V. E. Henderson. His fellow workers in the Canadian Medical Association will sadly miss his unfailing loyalty and encyclopædiac knowledge. The main work of the Committee this year has been the completion of the Physicians' Formulary, which has been published by the University of Toronto Press on behalf of the Canadian Medical Association. Arrangements have been made to send a copy to any doctor in Canada who requests one. Other copies may be purchased by anyone interested from the University of Toronto Press or other book dealers.

103. The Physicians' Formulary has been so much a co-operative effort that it is difficult to acknowledge properly all who gave so generously of their advice and of their time in criticizing the manuscripts and correcting proofs. Besides the members of the Provincial Committees and the nucleus group on whose advice the form and general policy of the book was based, the Chairman wishes to thank the other members of the profession who have never failed him when he sought their advice.

104. Correspondence has been received from the Saskatchewan and British Columbia Divisions indicating that the profession feels that representations should be made to the Dominion Government requesting the regulation of the sale of penicillin so that it may be sold only on Doctors' prescriptions. The case for such regulations is fairly strong. According to our latest information, sale without prescription is not permitted in the U.S.A. There is, however, this argument that the harm resulting from free sale would not be as great as the harm which might be done by the loss of public confidence in the medical profession and misunderstanding of their motives which might ensue upon their insistence of restricted sale. The matter is one of sufficient importance that we refer it to the General Council for discussion. The Chairman of this Committee wishes to express the opinion that the case for regulation must be based on the possibilities of harm to the public from open sale, and should be supported by definite experience, and to state that he has not at hand enough evidence to support a case on such grounds.

105. The Committee on Pharmacy of the British Columbia Medical Association has also recommended that preparations containing very large doses of Vitamin D be restricted to sale by prescription only. There is available in the literature, both clinical and experimental, sufficient evidence of harm from injudicious use of these preparations to make a strong case for the regulation of their sale. The question of whether or not it would be advisable for the C.M.A. to petition the Dominion Government to restrict the sale of penicillin and of high Vitamin D preparations is referred to the General Council.

All of which is respectfully submitted.

J. K. W. FERGUSON,
Chairman.

Approved.

A letter has been sent to all members of the Association, with a return post card, asking them to state whether they would like to have a complimentary copy of the Formulary. Nearly 9,000 letters were sent out and to date 5,562 requests for copies have been received.

The Department of Veterans' Affairs has adopted the Formulary as their official Formulary.

To non-members of the Association, the book will sell at $1.00 per copy in paper binding, and $1.50 in fabrikoid binding.

The French edition for the Formulary is not yet ready for distribution but will be available in the near future.

REPORT OF THE COMMITTEE ON EPIDEMICS

Mr. Chairman and Members of General Council:—

106. Fortunately our land has again been spared the experience of any country-wide epidemic disease of serious nature during the year just past.

To many it seems almost miraculous that serious epidemic disease has not been more prevalent and widespread on the European and indeed other Continents resulting from severe privations, hardships and famine, which are, in countless instances, far beyond human endurance. It is feared we may expect worse to come.

107. Our nation-wide organization is intact and ready to go into action speedily at the inception of any serious widespread epidemic disease. Our readiness to cooperate is welcomed and greatly appreciated by the Department of National Health.

108. It is worthy of note that the Department has been fortunate in securing for a year the services of Dr. D. F. Milan of the Rockefeller Foundation, a man of wide experience in the study of Epidemiology in many countries. We will be glad to assist him and will await with great interest the result of his studies in Canada.

All of which is respectfully submitted.

T. H. LEGGETT,
Chairman.

Approved.

REPORT OF THE COMMITTEE ON EDUCATION

Mr. Chairman and Members of General Council:—

109. Having in mind the need for increased facilities for the training of Medical Specialists, now that Specialists are required to be certified by the Royal College of Physicians and Surgeons of Canada, the Committee recommends:—

1. That the minimum requirements for the course of training in each specialty, as to the Basic Sciences and the clinical and practical training, be clearly defined.
2. That the Royal College of Physicians and Surgeons of Canada, in conjunction with the Association of Medical Colleges of Canada, be requested to undertake the defining of such requirements.
3. That the said Colleges be asked to survey facilities for this training in Canada including those hospitals without Medical School connection which might provide adequate facilities and would be willing to do so.

The foregoing has been submitted to the entire Committee as a questionnaire and has received the approval of the majority.

110. In addition, the Nucleus wishes also to present a recommendation arising out of a letter from Dr. Brock Chisholm and referred to this Committee. The Committee recommends, in accordance with suggestions in the letter, as follows:

That the fundamentals of Psychological Medicine be incorporated into Post Graduate and Refresher Courses, preferably by clinical teaching in Out Patients' Psychiatric Clinics, and that adequate facilities be provided for this purpose.

All of which is respectfully submitted.

O. W. NIEMEIER,
Chairman.

Approved.

REPORT OF THE COMMITTEE ON INDUSTRIAL MEDICINE

Mr. Chairman and Members of General Council:—

111. I have the honour to present the following report on the activities of the Committee on Industrial Medicine for 1945-46.

112. During this period a series of eight papers on various aspects of medical care in Industry, which had been published previously in the *Canadian Medical Association Journal*, were reprinted and bound in the form of a booklet entitled "Industrial Medicine". One thousand copies of this booklet were printed.

113. Your Committee had previously approved a report on "Standing Orders for Nurses", which had been prepared and published by the Council on Industrial Health of the American Medical Association. Arrangements were made to republish these Standing Orders in *The Canadian Nurse*, and one thousand reprints of these Standing Orders were obtained.

114. The booklet on Industrial Medicine and the Standing Orders for Nurses in Industry have been mailed to all Doctors who are known to be engaged in part-time or full-time industrial practice throughout Canada.

A limited number of the booklets and the Standing Orders are still available for distribution to any individual Doctors who may request them.

Apart from the foregoing, no matters have been referred to this Committee and no other activities were carried out.

All of which is respectfully submitted.

H. GRAHAM ROSS,
Chairman.

Approved.

REPORT OF THE COMMITTEE ON PUBLIC HEALTH

Mr. Chairman and Members of General Council:—

The Committee on Public Health begs to submit the following report:—

115. During the year just passed no questions were referred to the Committee by the Executive nor by General Council. Requests were sent to the divisional committees for their recommendations and the replies received emphasized only one point—the difficult question of housing all over Canada.

These facts point to the peculiar position in which the Public Health Committee of the Canadian Medical Association finds itself. Its activities are principally the making of recommendations to the general council of a national medical body, whereas the subjects under discussion are almost exclusively under provincial jurisdiction.

116. The Nucleus Committee met in Montreal on April 10 and decided to make the following recommendations to General Council:—

1. That General Council go on record as endorsing every occasion to improve the housing situation in Canada; that we request the Federal Government to do all it can to improve housing; and that existing surveys be brought up to date in order that our information on the subject may be as accurate as possible; and that this whole question be sent on to the Executive Committee for further study and implementation.

From some provinces come complaints that full use is not being made of the opportunity to renovate and modernize old apartment and business blocks. From others come the information that such sub-division of old buildings is producing living quarters which are far below standard in the matter of sufficient bathroom and kitchen space. It is alleged further that the emergency housing activities conducted by the Federal Government are producing whole streets and wards of houses which do not conform to the building by-laws of the cities in which they are located. In view of the importance of housing from a health standpoint it would appear that the Canadian Medical Association, either on its own responsibility or through co-operation with the Canadian Public Health Association, should assume leadership in such a survey.

2. That Council should recommend that a part of any federal grant to the public health funds of the province should be set aside for the subsidization of a few carefully selected public health activities performed by the general practitioner. Many of these activities, applied to the individual are fairly well carried out by the public health authorities in large centres of population, but because of lack of personnel and distance are applied in a rather sketchy manner in rural districts. Two of the activities considered were pre-natal care and diphtheria immunization. It is recommended that this be referred to the Executive Committee and the Committee on Economics.

3. That council should protest to the federal department of health the excessive advertising of cathartics or other drugs over the radio and in the press. We realize that as long as such advertising conforms to the provisions of the Food and Drug Act little can be done to stop it by legal means. Something, however, might be done to discourage it.

All of which is respectfully submitted.

R. VANCE WARD,
Chairman.

Approved.

REPORT OF THE COMMITTEE ON MATERNAL WELFARE

Mr. Chairman and Members of General Council:—

117. At the date of submission of this report, the Committee has not met as a whole, it being impossible to convene such a meeting to include all the Provincial Representatives.

The members of the Nucleus Committee have held one formal meeting and there have been several informal discussions of matters pertaining to the responsibilities of this Committee.

118. It is recommended by the Committee that the Canadian Red Cross Society be given every encouragement and assistance in providing stored blood and plasma for use in obstetrical requirements, as it is felt that, to a large extent the lack of readily available whole blood constitutes an important factor in contributing to maternal mortality.

119. Recommendations from the Chairman of the Maternal Welfare Committee of the Quebec Division were discussed. These were as follows:—

(*a*) "The development of means of providing everywhere blood for transfusion in the event of severe childbirth and that the present Society use every means of bringing to the attention of the Federal and Provincial authorities the desirability of continuing and enlarging the present blood banks already functioning throughout Canada and that facilities for the determination of the presence or absence of the Rh factor should be an integral part of such an establishment."

The foregoing is endorsed by the Nucleus Committee, as indicated in preceding paragraph, and is to be recommended for approval to the General Committee.

(*b*) "The increasing incidence of Tuberculosis with pregnancy, particularly in the later war years, has introduced a difficult problem in the hospitalization of pregnant women." Attention is then drawn to "urgent need for further facilities for the adequate pre- and post-confinement care of such cases."

The Nucleus Committee did not discuss this problem in detail or reach any final conclusion pertaining thereto, but will place the subject on the agenda for the consideration of the General Committee.

(*c*) "That a five year survey of the results of treatment of toxæmia throughout the nine provinces of Canada be undertaken as a means of comparing and determining the most effective method of treatment at the present time."

It was the opinion of the Nucleus Committee, in this regard, that "because of the extent of the problem of such investigation of the toxæmias of pregnancy, the various Chairmen of the Provincial Committees on Maternal Welfare be notified of this recommendation and be prepared to discuss this subject at the meeting of the General Committee to be held during the annual meeting at Banff.

120. It is recommended by the Nucleus Committee that a plan be instituted for the detailed investigation and study by each Provincial Maternal Welfare Committee of the causes and preventability of individual maternal deaths each year in every province and that this be undertaken by a detailed study of case records in co-operation with the respective Departments of Public Health. This recommendation is made in the conviction that the causes of individual maternal deaths are not, as a general rule, adequately investigated with a view to determining the means of their prevention for the education and enlightenment of the medical profession as a whole.

121. Because of the time-consuming details of organizing the work each year of both the Committee on Maternal Welfare of the C.M.A. and of the Maternal Welfare Committees of the various divisions, it is the recommendation of the Nucleus Committee that, in so far as possible, the personnel of these Committees should be appointed for a period of more than one year at a time or that they should be re-appointed in such a manner as to retain their services and interest for a period of at least two years. It is considered that in this manner much more may be accomplished.

All of which is respectfully submitted.

A. B. NASH.
Chairman.

Approved.

REPORT OF THE COMMITTEE ON CONSTITUTION AND BY-LAWS

Mr. Chairman and Members of General Council:—

122. In 1944 and in 1945 Council discussed certain proposals for revision of the Constitution and By-Laws designed to broaden the membership of the General Council and to make it more completely representative of every aspect of Canadian Medicine. The discussions were valuable in clarifying the broad functions and responsibilities of the C.M.A. In 1945, in bringing forward its recommendations the Committee on Constitution and By-Laws advised that final action be postponed until 1946 in the belief that medical officers in the Armed Forces would then have returned from overseas and could share in the discussions and decisions. After open discussion General Council referred the proposals to the Executive Committee for study. The Executive Committee invited each of the Provincial Divisions to submit an expression of opinion upon the proposals and referred the subject back to the committee on Constitution and By-Laws for final action before the meeting of General Council in 1946.

Approved.

123. Your Committee has studied the matter further and again advances the recommendation that the membership of General Council be broadened in order that it may be made as representative as possible of every aspect of Canadian medicine. Your committee advances proposals to accomplish this in four fields.

1. *Representation on the General Council of the Medical Schools of Canada.*—The changes in our social structure which have occurred in the past ten years and are still occurring have profoundly affected the profession of medicine and are likely to cause great changes in its practice in the immediate future. No phase of the practice of medicine has been more profoundly affected than has the teaching of medicine. Its problems are great and are not widely recognized. The change in patient status which developed during the depression and has continued under prepaid hospitalization schemes is removing clinical teaching material from hospitals. If the C.M.A. is to represent all phases of the practice of medicine provision must be made whereby Council can deliberate upon medical education with official representatives of the medical faculties who have authority to speak for their faculties and power to implement action. The General Council has a standing committee on Medical Education but there is no provision for any close relationship between medical educators and the C.M.A.

2. *Representation upon the General Council of Certain Affiliated Societies.*—The changing needs of the times have led in recent years to the establishment of several medical associations designed to meet problems in special fields. These arise from the feeling that the needs of the special groups of doctors can be solved better by themselves than by the C.M.A. In this sense they have broken away from the C.M.A. Contact with these special groups and with their problems could be maintained were they to become affiliated societies and be entitled to representation on General Council.

3. *That the C.M.A. concern itself with the problems of undergraduate students in medicine and make provision for their representation on Council.* Undergraduates and interns have their own problems. They have already made a creditable attempt at solving them by organization. The C.M.A. can render valuable service to men who shortly will be members of C.M.A., by the study of undergraduate problems and action toward their solution. Some provision within the C.M.A. for undergraduates might be valuable to both parties.

4. *That there be members upon the Executive Committee elected at large from the General Council.* At present the elected members of the Executive Committee are the nominees of the Divisions and therefore represent first and foremost the interests of their own section of Canada. There is need for representation at large from General Council.

Approved.

124. To permit discussion and action upon the above proposals at the meeting of Council in 1946, the Committee on Constitution and By-Laws recommends the following revision of the Constitution, notice of which has been published in two issues of the *Journal* as is required by the Constitution and By-Laws:—

(1) *Article IX of the Constitution, the General Council*—add the following clauses:—

(*h*) A representative of the Association of Canadian Medical Colleges who is a Dean and a member of this Association.

Approved.

(*i*) One representative from each affiliated society whose members are doctors and members of the C.M.A.

It was agreed that this clause should be referred back to the committee for further study and report to the next annual meeting.

(j) Representatives of undergraduates in medicine and interns.

Approved.

(2) *Chapter VI of the By-Laws — Officers and Executive Committee:—*

Section 2.—Duties of nominating committee. Paragraph 2, change to read as follows:—

2. Nomination for Executive Committee, which in addition to those who are members *ex officio* (See Chapter VIII, Section 4) shall consist of sixteen members drawn from General Council; three as members at large and thirteen geographically distributed as follows: three shall be resident in each Province in which an office of the Association is located and one shall be resident in each other Province.

It was agreed that this subsection should be referred back to the Committee on Constitution and By-Laws for further study and report to the next annual meeting.

124A. To date, in response to the request of the Executive Committee to the Provincial Divisions, an expression of opinion has been received from six Divisions. They may be summarized as follows:

125. PROPOSALS (see foot note)

Provincial Divisions	*A*	*B*	*C*	*D*
Prince Edward Island	Medical Schools represented by one Dean	Eliminate	Approved	Approved
Saskatchewan	Approved	Approved	Approved	Approved
Manitoba	In general do not approve. If necessary it should be reciprocal		Approved	No direct answer
British Columbia	Favourable	Not favourable	Favourable	Not favourable
Quebec	Not in favour	Not favourable	Strongly opposed	Not in favour
Ontario	Opposed	Opposed	Approved	Agree in principle
Nova Scotia				
New Brunswick				
Alberta				

A. That each of the Universities of Canada which have a Medical School be represented on General Council by the Dean of the Medical School.

B. That affiliated societies, which are medical, under stipulated circumstances, be represented on General Council, each by one member.

C. That provision be made for undergraduate membership in the Canadian Medical Association.

D. That there be added to the Executive Committee three members-at-large elected from the General Council.

For the information of members of General Council, the present composition of the General Council is indicated below.

126. GENERAL COUNCIL, CANADIAN MEDICAL ASSOCIATION, AS AT PRESENT CONSTITUTED

Officers of Association	*Chairmen of Standing Committees*	*Presidents and Secretaries of Divisions and Delegates Proportionate to Membership*	
Chairman General Council	Executive	Nova Scotia	2 plus 7
President	Legislation	New Brunswick	2 plus 7
President-elect	Medical Education	Prince Edward Island	2 plus 5
Past Presidents (15)	Post Graduate	Quebec	3 plus 7
Honorary Treasurer	Central Program	Ontario	2 plus 14
* General Secretary	Constitution and By-Laws	Manitoba	2 plus 7
* Associate Secretary	Archives	Saskatchewan	2 plus 7
* Editor	Ethics and Credentials	Alberta	2 plus 7
* Consultant in Medical Economics	Economics	British Columbia	3 plus 7
Dept. Veterans' Affairs	Pharmacy		
Dept. of National Health and Welfare	Cancer		
	Maternal Welfare		
	Nutrition		
* Appointive Officers, no voting power	Industrial Medicine		
	Membership		
	Public Health		
	Department of Cancer Control		
21	17	88	
	Total 126		

127. STRUCTURE OF THE NOMINATING COMMITTEE

The president plus 9 members.

Each Division appoints one member to the Nominating Committee. Any vacancies which remain when General Council convenes are filled by nominations from the floor under provisions designed to ensure representation from each of the Divisions.

128. STRUCTURE OF THE EXECUTIVE COMMITTEE

President, President-Elect, Immediate Past President, Chairman of General Council, Honorary Treasurer, *General Secretary, *Editor, *Managing Editor and 13 members. The 13 members are made up of 3 members each from Ontario and Quebec and one each from the remaining provinces.

* Appointive officers—no voting power.

The Executive Committee on March 11, 1946, submitted to the Committee on Constitution and By-Laws the Statement of Policy and the Constitution and By-Laws of the Canadian Association of Medical Students and Interns with the request that they be studied with a view to informing the Executive Committee as to the desirability of meeting the request of CAMSI for affiliation with the C.M.A.

Study of these documents by your committee reveals them to be entirely compatible with the Constitution of the C.M.A. and acceptance of CAMSI as an affiliated society of the C.M.A. is recommended.

All of which is respectfully submitted.

R. I. HARRIS,
Chairman.

Approved.

REPORT OF THE COMMITTEE ON LEGISLATION

Mr. Chairman and Members of General Council:—

129. Since our annual meeting of 1945, your Committee wishes to report as follows on legislative measures and proposals affecting the medical profession.

1. *Saskatchewan.*—(*a*) Hospitalization Act. The most important legislation passed at the current session of the Saskatchewan Legislature is that of providing a hospitalization scheme for the province.

Under this scheme hospitalization services will be provided for all residents of Saskatchewan with certain exceptions where provision is already made by another government agency (*e.g.*, Indians, indigents, war prisoners, etc.).

130. During the second reading of the bill Mr. T. C. Douglas, Premier and Minister of Public Health made the following statement: "This is the latest phase of a plan whereby it is hoped eventually to provide the people of the province with all the health services they require irrespective of their individual ability to pay."

131. It was also stated that the plan is not dependent upon the success of the Dominion-Provincial Conferences, but that it would be initiated under any circumstances. Total annual cost is estimated at four million dollars.

132. Committees of the College of Physicians and Surgeons of Saskatchewan have endorsed the principles of the bill but have recommended the urgent provision of suitable accommodation for care of the aged sick, chronically ill and convalescents, as well as a rapid extension of hospital facilities.

133. (*b*) Venereal Disease Prevention Act 1946. This Act is modelled along lines intended to give more power to public health officials in controlling and preventing the spread of venereal disease.

134. (*c*) Health Services Act 1946. This new Act is really a consolidation of two Acts,—The Municipal Medical and Hospital Services Act, and the Health Services Act 1944, both of which are repealed by this Act.

135. (*d*) Review of Professional Acts. The Select Standing Committee on Law Amendments was instructed to review all the Professional Acts, including the Medical Profession Act. The terms of reference were as follows:

1. Ascertaining the powers and duties contained therein.
2. Determining whether the exercise of such powers and the discharge of such duties by such professional societies are in the public interest.
3. Determining whether the affairs of such societies are carried on in the public interest.
4. Securing such uniformity in the provisions and administration of such Acts as may be found possible.
5. Recommending such amendments thereto as may seem expedient and advisable.

136. In preparation for the sitting of this committee, the Provincial Secretary requested the College of Physicians and Surgeons of Saskatchewan to make a return covering many aspects of the affairs of the College for the period of the last fifteen years. Representatives of the College made a presentation which was courteously received by the Committee. Many misconceptions about the functions of the College and its Council were dealt with and corrected as well as possible.

137. (2) *Manitoba.*—In 1945 the Manitoba Legislature passed "The Basic Sciences Act", requiring all persons practising the Healing Arts to be qualified in certain Basic Sciences.

This Act requires all persons practising the healing arts to meet the standard laid down by a committee appointed by the University Senate in the basic sciences. Therefore all graduates in medicine from any universities, including Manitoba, must present themselves before this committee and show that they have received certain hours of training in each of the basic sciences before they are given an enabling certificate to register with the College of Physicians and Surgeons of Manitoba, or the Association of Osteopaths or of Chiropractors in Manitoba, the latter two having been licensed in Manitoba last year.

This means that all persons wishing to commence the practice of medicine, osteopathy or chiropractic in Manitoba must either show that they have met the terms of the Act in the basic sciences, or must pass an examination set by this Committee of the University Senate.

138. (3) *Quebec.*—During the 1946 session of the Province of Quebec Legislature, the chiropractors introduced a Bill asking that they be incorporated in the province. The Bill was defeated in the Private Bills Committee, and therefore it is shelved for another two or three years. The premier promised to name a committee under the Department of Health and Welfare which would study the matter of chiropractors and their claims to be incorporated, and report to the Minister.

139. (4) *National Health Insurance.* The fate of the proposed National Health Insurance Plan now depends on the outcome of the Dominion Provincial Conference which commences April 26th. At the Conference last autumn, most provinces indicated that they were not ready to consider any plan of Health Insurance as that suggested by the Federal Government because of the large financial commitments which would be involved—commitments which are far beyond the means of any provincial government at the present time.

140. (5) *British legislation.* Attention of Council is called to legislation which is in the making in England for the nationalization of hospitals in Great Britain, details of which are not yet available.

All of which is respectfully submitted.

C. J. VENIOT,
Chairman.

Approved.

REPORT OF THE COMMITTEE ON CREDENTIALS AND ETHICS

Mr. Chairman and Members of General Council:—

The Committee on Credentials and Ethics begs to report as follows:

141. Only one problem was presented for adjudication by this Committee. We were asked to express an opinion regarding the legal and ethical problem of a doctor when asked for a medical report on a patient by an insurance company. It was suggested that to give such a report might be a breach of confidence with the patient and might also have legal implications.

All the members of the Committee were circularized as to their opinions in this matter and 13 members replied. The opinions of the 13 members were unanimous and may be summarized as follows:

1. When a doctor receives a signed request from a patient to give a medical report, he is thereby protected legally—no matter what he may divulge.
2. If there is any doubt in the doctor's mind whether the patient completely understood the full significance of the situation, he could tell the insurance company that the patient must make personal application to him (the doctor) before confidential matters are disclosed. In that case, the patient would be sent back to the doctor who could explain all the implications.
3. It seems that no good purpose will be served by a doctor withholding a report. Such a course would merely increase the suspicion of the company and in that case the application would be refused.
4. Reports to insurance companies should be complete.

All of which is respectfully submitted.

J. D. Adamson,
Chairman.

Approved.

REPORT OF THE COMMITTEE ON LABORATORY TECHNICIANS

Mr. Chairman and Members of General Council:—

142. No formal meeting of the Committee was held during the past year although a few members met at lunch during the Montreal meeting and discussed some matters of special interest. A meeting of the Nucleus Committee was held on October 19th, 1945.

Proposed College of Technicians

143. During the discussion following the reading of the Report of the Committee at the Montreal meeting, Dr. Robert T. Noble, Secretary of the College of Physicians and Surgeons of Ontario, raised the question of the advisability of the establishment of a College for Technicians in the Province of Ontario. It should be stated that the proposed College was intended for technicians of all types—medical, laboratory, radiology, etc. He subsequently asked your Chairman to attend a meeting of the Joint Advisory Committee of the College held during November of last year. At this meeting in the course of the debate your Chairman made the following points so far as laboratory technicians were concerned:—

144. First and foremost a laboratory technician must be apprentice trained. Lectures, practical classes, demonstrations and the reading of text-books are all very well but the student technician must carry out the various procedures which he is required to know under the eye of an already trained technician. He must carry them out not once but repeatedly and before he is certified as qualified to occupy an independent post he should do his work with the knowledge that his results will be incorporated in laboratory reports. This training may be compared to a period of internship in a hospital for the medical graduate. It cannot be obtained in a College.

145. The more elaborate the training of a technician the longer it will take, the more costly it will prove and the higher will be the salary he will demand. Many laboratories prefer to train their own technicians and the result of this somewhat informal method has in the past produced excellent results.

146. Thus the present system of Schools for Technicians scattered through the Dominion where young men and women receive individual practical training of the apprentice type fills the bill. That the graduates of these various schools are adequately taught and attain a certain common standard of skill is ensured by their passing the one portal of the examination of the C.S.L.T. In other words the method of training at present existing in the schools approved by the Canadian Medical Association and by universities such as Queen's, combined with the examination held in the C.S.L.T. is adequate. The establishment by the Province of a College for Technicians would seem to be a somewhat expensive luxury.

147. It should be stated that this idea of a Provincial College was intended to include technicians of other types such as x-ray workers. Enquiry amongst the radiologists led the Chairman to believe that the above views were generally held. Most heads of laboratories desire in their subordinates, primarily, technical skill. They are the hands, not the brains, of the departments. That this is so, is evidenced by the requirement that in the case of hospital laboratories there should always be a medical man as director in charge. For many laboratory procedures technicians can never issue reports on their own responsibility.

Common Standards of Preliminary Education

148. At the meeting of the Committee in October, Dr. Berger brought up the problem of the different standards and terminology used in the various provinces in connection with educational qualifications required for entrance to approved schools. The Secretary was instructed to obtain information on this point. This information has been collected and will be digested and the results submitted to a subsequent meeting.

Resignation of the Secretary

149. At the first of the year Dr. Agnew resigned as Associate Secretary of the Canadian Medical Association to become full-time Secretary of the Canadian Hospital Council, with which body he had been connected in a part-time capacity since its inception. Although most of the activities of the Department of Hospital Service and of the various committees whose work was related to that Department were transferred to the Canadian Hospital Council, the Committee on the Approval of Schools for Training of Technicians was of the opinion that this is one of the activities which should remain under the Canadian Medical Association. As Dr. Agnew

was of the opinion that the secretary of this Committee should be a member of the Canadian Medical Association secretarial staff, he has tendered his resignation as secretary of this Committee. The Committee accepts the resignation of Dr. Harvey Agnew with great regret. He has been the moving force in the Committee's work during the whole period of its existence. We are glad to know that he has agreed to remain a member of the Committee where his advice and good judgment will be of the greatest value. The Committee also regretfully accepts the resignation of Miss Jessica Fraser who accompanies Dr. Agnew to his new sphere of activity.

RESIGNATION OF THE CHAIRMAN

150. The Chairman begs to state that owing to his retirement from his present post and his return to Great Britain he is compelled to resign his position as Chairman of the Technicians Committee and his membership in the Canadian Medical Association. In doing so he wishes to express his regret at leaving his many colleagues in Canada and particularly his fellow members and officials of the Canadian Medical Asociation. He will always retain a pleasing remembrance of co-operation and efficiency in the conduct of things medical in the Dominion. During his tenure of office the Technicians Committee has been enlarged both as regards its personnel and duties. Without prejudicing the right of the Council to do as they think best it may be stated that the succession of the Chairmanship is already provided for in the person of Dr. George Shanks, the Vice-Chairman.

All of which is respectfully submitted.

JAMES MILLER,
Chairman.

Approved.

REPORT OF THE COMMITTEE ON APPROVAL OF HOSPITALS FOR INTERNSHIPS

Mr. Chairman and Members of General Council:—

151. During the past year the list of hospitals approved for internship has again been revised but very few changes were found necessary. At the present time there are fifty-four hospitals on the approved list representing approximately 857 highly desirable internships. In addition, a group of 13 hospitals providing 109 graduate and under-graduate internships but not complying fully with the provisions of the "Basis of Approval" is listed as "Commended Hospitals". Although the medical staffs have been short handed during the war years, the standards of staff organization and supervision, the percentage of autopsies, and the oversight of the work of interns, have been maintained to a highly commendable degree.

Approved.

152. As in previous years the problem of obtaining interns for non-teaching hospitals has been a serious one and would seem to be becoming more acute as fewer interns are available for work in the non-teaching hospitals. The problem is a complex one and has been discussed in previous reports. In an effort to meet this situation more and more non-teaching hospitals, it is being noted, are employing specially qualified nurses, laboratory technicians, record librarians and, in some cases, ward secretaries, to perform many of the clinical, laboratory and clerical duties which ordinarily would have been done by interns.

Approved.

153. Up to the present the Canadian Medical Association has approved hospitals for internship only, although the subject has been discussed on frequent occasions, the approval of residencies in specialties has not been undertaken. With the certification of doctors in various specialties and the probability that this listing may become more significant under any possible plan of health insurance, serious consideration should now be given to the listing of those residencies in specialties which could be recognized for the Royal College certification or for those planning to practise in the United States for the specialty boards in that country. This appraisal of residencies offered might be made either by the Canadian Medical Association as a further development of its approval of internship, or by the Royal College of Physicians and Surgeons of Canada which already is appraising the training received by the applicants. Inasmuch as the standards to be set up must be at such a level that they will be recognized by the Royal College, it is recommended that a joint committee of the two bodies be set up with instructions to explore this subject and to make recommendations concerning the procedure to be followed and the auspices under which such development should proceed.

This section was referred to the Executive Committee for study.

All of which is respectfully submitted.

A. K. HAYWOOD,
Chairman.

REPORT OF THE CENTRAL PROGRAM COMMITTEE

Mr. Chairman and Members of General Council:—

154. Your Committee held five meetings. As in previous years your Committee drafted the Scientific Program from a list of subjects and names of speakers submitted by the Local Program Committee and from offers of papers received from members of the Association.

155. The general order of the Scientific Program is the same as that adopted in recent years with Round Table Conferences followed by a General Session on three mornings and Sectional Meetings on two afternoons. At the request of the Local Program Committee, Thursday instead of Friday afternoon, will be reserved for golf, and Sectional Meetings will be held on Wednesday and Friday afternoons.

156. The Scientific Program provides for twenty-one Round Table Conferences representing eleven sections, the presentation of twelve papers at General Sessions and ninety-two papers at meetings of thirteen sections. At this Annual Meeting the newly formed Section of Psychiatry will hold its first meeting.

157. Our Guest Speakers will be: Dr. Leonard Parsons, Professor of Diseases of Children, the University, Birmingham, England, who will deliver the Blackader Lecture; Dr. Arthur W. Proetz, Professor of Otolaryngology, Washington University, St. Louis, Mo.; Dr. Rubin H. Flocks, Professor of Urology, University of Iowa; and Dr. Ralph Knight, Head of the Department of Anæsthesia, University of Minnesota.

158. Your Committee wishes to acknowledge the valuable assistance and co-operation received from the Local Program Committee in Vancouver in the drafting of the Scientific Program, and to express its thanks to those contributing to the Scientific Program by the presentation of papers and by conducting Round Table Conferences.

All of which is respectfully submitted.

DUNCAN GRAHAM,
Chairman.

Approved.

REPORT OF THE COMMITTEE ON ECONOMICS

Mr. Chairman and Members of General Council:—

159. The outstanding event of the current year in the field of medical economics related to the proposals of the Government of Canada presented at the opening session of the Dominion-Provincial Conference on Reconstruction convened in Ottawa in August 1945. In these proposals the federal government, while seeking to retain the taxing fields which had been left to it during the war period, offers in exchange to make certain grants and subsidies to the provinces. In addition to the grants to be outlined under the National Health Program, the federal offer includes an annual basic subsidy of at least $15.00 per capita, assistance to extend old age pensions, assistance in the extension of unemployment insurance, and assistance in the operation of rehabilitation and vocational training programs.

160. Under the heading of The National Health Program, the specific proposals of the federal government are as follows:

(*a*) Grant for planning and organization;
(*b*) Health Insurance;
(*c*) Health Grants;
(*d*) Financial assistance in the construction of hospitals.

(*a*) Grant for Planning and Organization

161. This grant would be available to any provincial government to assist in the establishment of a full-time staff "to prepare for and organize health insurance benefits within the province and make provision for the training of necessary personnel". In accepting this grant the provincial government would agree to submit its health insurance plan to the federal government and to complete preliminary plans for the implementation of this plan within a period of 18 months.

The amount to be distributed under these terms is $620,000; *i.e.*, to each province $5,000 plus five cents per person according to the 1941 census.

(*Comment*: Several of the provinces have stated that this grant is not large enough to allow for planning and training, and that it should be provided for a study of the health needs of the province rather than for health insurance organization.)

(*b*) Health Insurance

162. Having employed the planning and organization grant in the preparation of a plan and the training of necessary personnel, the province may inaugurate its health insurance scheme in stages, as follows:

1st Stage.—General practitioner service, hospital care and visiting nursing services, to be provided within two years of entering upon the plan.

Later Stages.—Other medical services (consultant, specialist and surgical); other nursing services (including private duty); pharmaceutical (drugs, serums, and surgical appliances); laboratory services (blood tests, x-rays, etc.).

Using the figure of $21.60 as the estimated cost per capita of this full program of health insurance benefits, the federal government undertakes to meet up to 60% of this cost, *i.e.*, $12.96. The estimated per capita cost of the first stage would be $10.20 of which the federal share would be $6.12. Additional federal contributions would be made as the additional benefits are provided. There is the footnote that estimated costs will be revised on the basis of actual costs after three years. On the basis of the 1941 census and the estimated cost of $21.60 per capita, the full health insurance program would cost $250 million per annum of which the federal government's share would be $150 million.

(*Comment*: There has been divergence of opinion as to the order of introduction of benefits. The needs and available personnel may vary greatly from one province to another. Should there be greater flexibility in this regard? In the event of benefits costing more than the estimated $21.60 per capita, should there be provision for further federal assistance?)

(*c*) Health Grants

163. "The object of public health grants is to ensure a more nearly standard quality and quantity of public health services throughout Canada at a higher level. . . . The Government is therefore giving consideration to providing a series of grants . . . without waiting for the inauguration of health insurance." The grants suggested are:

General public health	$4,022,600
Tuberculosis	3,000,000
Mental health	3,987,000
Venereal disease	499,500
Crippled children	497,900
Professional training of public health workers	250,000
Public health research	100,000
Civilian blind	1,243,900
Total	$13,600,900

In order to make such grants to the provinces, the Governor-in-Council must be satisfied regarding the efficiency of the provincial administration of these services.

(*d*) Financial Assistance in the Construction of Hospitals

164. "It is recognized that the provision of complete health insurance services would require a considerable extension in hospital facilities throughout the country. Much of this expansion would be required even for the first stage specified. It is also recognized that this expansion would be desirable quite aside from health insurance in order to provide the proper facilities for treatment and research.

"To make a hospital extension program less burdensome to the provincial governments and to local communities, it is proposed that the federal government should provide loans to the provincial governments entering health insurance agreements, and through provincial governments to municipalities and other organizations, for necessary expansion of hospital facilities, at a rate of interest equal to or slightly above the cost of such loans to the Dominion, and that the interest and amortization would be payable out of the hospital care benefit under the Health Insurance Grant, or out of the Tuberculosis Grant or the Mental Health Grant, as the case may be."

Certain Significant Features

165. (a) The Model Provincial Act which appeared in the former draft Health Insurance Act has been omitted and in its place appears the greater flexibility of introduction by stages. Within limits, this allows for provincial variation to meet varying provincial needs. On the other hand it removes a useful standard by which to appraise any proposed plan.

(*b*) The contributory factor. Whereas the draft Health Insurance Act stated that "every adult shall pay to the Health Insurance Fund a contribution of . . . in each year . . .", the present proposals state, "The agreement should further provide . . . for a registration fee to be paid by or on behalf of every person . . ."

(*c*) Administration. The draft Health Insurance Act called for administration by a Commission: the Proposals refer to the provincial government as one of the parties to the agreement; they make no mention of the administration of the plan.

Divisional Committee Activities

Prince Edward Island

166. In November the Prince Edward Island Medical Society notified the government of the province of their willingness to co-operate in the development of plans for health services for the residents of the province and, to this end, their desire that the Association should be represented on any committee drawing up such plans. There have been several discussion meetings with the government in this connection.

167. The Committee on Economics has also undertaken a study of a schedule of fees for the Division in an attempt to make a new schedule conforming closely to what has been considered to be a more or less accepted average across Canada.

New Brunswick

168. The work of the New Brunswick Committee on Economics throughout the past year has consisted largely in giving assistance to the Medical Society on health insurance matters. The Society was requested by the Minister of Health and Social Services to state its position on health insurance in New Brunswick. A brief was, therefore, submitted in which attention was drawn to the present gross shortage of medical, dental and nursing personnel, hospital accommodation and public health services throughout the province. In view of this situation the profession supported a procedure of evolution with better use being made of facilities at hand with certain improvements and additions.

Quebec

169. The Committee on Economics reports that several meetings were held to discuss the question of tariff to be developed by the Department of Veterans' Affairs, and their representative to the central committee was duly instructed on the view-point of the Division.

170. On the subject of health insurance the committee made representations to the delegation of the College of Physicians and Surgeons which interviewed members of the provincial cabinet last November. "We are glad to report that our recommendations were incorporated in the brief which was presented at the interview".

171. Briefly, the recommendations of the committee were as follows:

(*a*) We are in favour of the proposals concerning preventive medicine and we feel that the Province of Quebec should accept the proposed grants to aid in the control of tuberculosis, venereal disease, etc.

(*b*) We feel that a study of the problem of health insurance in the Province of Quebec should be made as suggested in the Proposals.

(*c*) It is our opinion, however, that the acceptance of the grant proposed to provide for this study, should not obligate the province to adopt any particular order of introduction of health insurance services.

(*d*) We are not in agreement with the order of introduction set forth in the proposals of the Dominion Government.

The Committee then set forth an alternative arrangement for the introduction of health insurance services, in which all phases of hospital care comprised the first stage.

Ontario

172. In Ontario the attention of the Division has been focused on two aspects of medical economics, the potentialities of the Federal proposals in the field of health, and a consideration of a plan of voluntary prepaid surgical care. The very specific proposals made by the Government of Canada to the provinces made it essential for the Ontario Division to advise the Government of Ontario of the views of the profession, in order that the offer of financial aid for the extension of health services might be considered in the light of medical conditions as they exist. The views of the doctors of Ontario may be summarized by stating that we favour a survey of the health needs of the province; included in that survey the activities of the Department of Health should be examined before accepting or rejecting the proposed health grants, and we feel that the conclusions of the survey should not be anticipated by assuming that the institution of health insurance will be recommended. We doubt the accuracy of the Federal estimate of the cost of a complete health service and we feel that before undertaking to provide for the day by day medical care of patients, there are several fundamental health requirements which should be either initiated or amplified.

173. The text of the brief presented to the Government of Ontario is as follows:

To the Prime Minister of Ontario and to
the Minister of Health, Ontario:

"The group which appears before you today is a delegation from the Joint Advisory Committee, which is made up of representatives of the College of Physicians and Surgeons of Ontario, the Ontario Medical Association, and the Faculties of Medicine of the four Universities of this Province. We speak for the medical profession of Ontario, and it is our desire to present to you the views of the profession on the proposals of the Government of Canada in the field of health for your information in relation to the resumption of the Dominion-Provincial Conference on Reconstruction.

174. "Believing that the welfare of the Dominion and its growth in power and influence are dependent on a closer union of the nine Provinces under the Government of Canada, we urge that no effort be spared to reach accord in the present Dominion-Provincial Conference on Reconstruction.

175. "Realizing that medical knowledge in the prevention and cure of disease is far ahead of the means for its utilization by the public, and that there are great disparities in the standards of health service in different parts of the Province, we advocate the extension of health service in Ontario.

176. "While we, representing the medical profession of Ontario, are not committed to any plan for such extension of health service, we have approved of the Principles Relating to Health Insurance which have been adopted by the Canadian Medical Association representing the nine provincial divisions.

177. "We have studied the Proposals of the Government of Canada, in particular as they relate to a National Health Program, and we wish to make the following recommendation — That the Government of Ontario accept the *Planning and Organization Grant* proposed by the Government of Canada, and appoint a body or commission which, in the specified period of eighteen months, would make an intensive study of the health needs of this Province and the best methods of ministering to these needs. We are prepared to co-operate in such a study and feel confident that it would be your desire to include us in the membership of such a planning commission. Acceptance of the planning and organization grant should not commit the Government of Ontario to a full acceptance of the *Health Insurance Proposal* of the Government of Canada. It is our opinion, based upon expert advice, that the cost of a complete health insurance plan will greatly exceed the figure of $21.60 per person which is suggested in the proposal. It should be left to the Government of Ontario to decide in what direction and in what manner medical services should be extended in this Province.

178. "With regard to the Health Grants proposed by the Government of Canada, we suggest that, if these

funds are accepted, their disposition be subject to examination and recommendation by the planning and organization group.

179. "As there is urgent need for the provision of additional hospital accommodation, we suggest that the proposal of the Government of Canada to provide *Financial Assistance in the Construction of Hospitals* is sound and should be studied by the planning and organization body.

180. "We wish to draw to your attention a report on Some Basic Requirements for the Improvement of Health Services, issued by the Nucleus of the Committee on Economics of the Canadian Medical Association. In brief, it is set forth that these requirements are:

1. A full program of preventive medicine;
2. Provision of medical and allied services for remote areas;
3. Provision of an adequate number of hospital beds;
4. Provision of diagnostic services (laboratory and x-ray);
5. Full coverage for the Welfare group;
6. Improved standards of living.

We endorse the program and suggest that it should receive serious study by the planning and organization body with a view to early implementation in this Province.

181. "We have been informed that Dr. Vivian is soon to resign his position as Minister of Health for Ontario. We congratulate him on his appointment to the Professorship of Social Medicine in McGill University and wish him every success, but we regret that his outstanding abilities are to be lost to this Province.

182. "The attainment of the highest level of health for all of the people is an objective which should command the concerted efforts of the whole community. The medical profession of Ontario, with its special knowledge of the problems, stands ready to contribute wholeheartedly in this objective."

183. In the discussion which followed the presentation of this brief the impression was gained that the Government of Ontario has no fixed plan for the early institution of compulsory health insurance and that this Province's participation in the Dominion proposals will be dependent on a satisfactory agreement in the field of taxation. At the time of writing, the outcome of the subsequent sessions of the Dominion-Provincial Conference on Reconstruction has not been made public and this Division cannot predict what effect this will have on governmental activity in the field of health services in this province.

184. The Ontario Division has been for more than two years studying the advisability of instituting a plan of voluntary prepaid surgical care to be offered to groups of subscribers of Plan for Hospital Care. The Council of the Ontario Medical Association has endorsed this venture into the field of medical care insurance but the opinion of the membership is divided on entering into a business undertaking of this sort. As the objects for which the Ontario Medical Association was incorporated made no provision for this proposed activity, it was necessary to consider applying for supplementary letters patent enlarging our objects as an essential preliminary step. A Special Meeting of the Council and of the members of the Ontario Medical Association was called in February 1946 and a by-law of the Board of Directors authorizing the application for appropriate amendment to our letters patent was presented. The Council overwhelmingly approved the by-law, but at the special business meeting of the members this resolution failed to carry by the necessary two-thirds majority. At the time of writing no action is possible in relation to the plan for voluntary prepaid surgical care but there is a possibility that the matter may be reopened at the Annual Meeting.

MANITOBA

185. The Economics Committee of the Manitoba Division submits the following report:

Our major problem this year was the arrangement of conditions of a contract for general practitioners who would be employed by municipalities as municipal doctors. The final arrangements were approved by the last special meeting of the Manitoba Medical Association.

186. Our next piece of work concerned the principles of guidance to the Manitoba Medical Service which is our plan for providing services to our people on a prepayment basis. Certain conclusions were reached which may help in other provinces when they come to consider a similar project, *viz.*:

(*a*) Do not engage another agency to do your business.

(*b*) No scheme can provide total coverage on a prepayment basis economically unless that scheme compulsorily embraces every person in the area concerned. Unless these conditions are made only the people requiring service will join and the scheme will always operate at a loss.

(*c*) Our partial plan, providing surgical and obstetrical service in a hospital does pay and is recommended as the plan that should be written where such coverage is desired.

(*d*) We are now in the process of negotiations with the Workmen's Compensation Board of this province for the revision of scale of fees for medical services. The hospitals of this community have made the same representation and we feel that there is just economic cause for this proposed revision and for changes in procedure which we feel would be mutually beneficial.

187. We have also considered the outline presented by the C.M.A. Committee on Economics regarding the essentials for the health of this nation and have come to the conclusion that these proposals, as published, are very worthy and present an ultimate aim which would be of great benefit to the citizens of this country. We would wish to point out that they are rather for the long view than for the period now at hand.

The Manitoba Medical Association has finally adopted a new scale of fees for general practitioners and specialists.

SASKATCHEWAN

General Remarks

188. During the year 1945 a great deal of activity has gone on regarding the development of health services in Saskatchewan. The Department of Public Health under the Ministry of the Hon. T. C. Douglas has used every available means to develop the field rapidly and to make a favourable political result of such activities for the year. The Minister with the other onerous duties of the Premiership, has placed leading responsibility and initiative on the members of his staff, some of whom are entirely lacking the confidence of the medical profession. The Department under such disorganized policy has made mistakes and promoted health services along lines which are unsound in the opinion of the Medical Advisory Committee of the College of Physicians and Surgeons.

189. Many conferences have been held with the Minister of Public Health and his Deputy during which the Medical Advisory Committee has found the Minister co-operative and has reached satisfactory agreement with him on many major issues. Unfortunately, in spite of these agreements with the Minister, the Health Services Planning Commission has attempted to develop the services along lines contrary to those agreed to by the Minister. It is hoped that a suitable permanent Chairman for the Health Services Planning

Commission will soon be available and an improved relationship established between the Commission and the Medical Advisory Committee. Certain confusion arose over duplication in Medical Advisory Committees; one being advisory to the Commission, another advisory to the Minister of Health. These two committees have been amalgamated and the medical profession will be represented in an advisory capacity henceforth by one committee only. This reorganization is already bringing good results.

190. At the time the present Government of the Province was elected, it advocated a program of State Medicine and there has been a reasonable public demand for health services on a State-Medicine basis. Since that time the public has become better informed on the issues at stake, and during the year 1945 evidence became apparent to all that public opinion now favoured a system of State-aided Health Insurance. The Minister of Health has recognized the changed public opinion and has consistently referred to his health plans as on a Health Insurance basis and contributory in character. Much of the confused public opinion has been due to lack of proper public education by the medical profession, and has been aided by frequent public utterances by self-appointed authorities promulgating false information and distortion of fact.

191. The prompt and effective response of the C.M.A. to our request for assistance has been greatly appreciated by the profession in Saskatchewan. The appointment of Dr. A. E. Archer to take the leading part in the practical assistance required has proved gratifying. Since his active participation with the Medical Advisory Committee, of which he has been appointed a member, a much closer basis of co-operation with the Minister of Health has been established. Already it is apparent that Dr. Archer has won the confidence and high esteem of the Premier and Minister of Health. His presence has been a source of inspiration to the Central Health Services Committee of the College, and has facilitated their activities very materially.

192. 1. *Department of Public Health—Trends and Objectives.* While the Health Services Planning Commission is directly responsible to the Minister of Health, agreements reached between the Minister and the medical profession have not been carried out as agreed, by the Health Services Planning Commission which is responsible for research data and the execution of plans for development of health services in the province. It has therefore been difficult for the Medical Advisory Committee to assess what progress has been accomplished from apparently satisfactory conferences with the Minister, and resulting agreements. Three examples may be cited as evidence of this difficulty:

(*a*) While the Minister agreed that government grants would not be given to municipalities which entered into municipal doctor contracts below an agreed "Model Contract" basis, the Health Services Planning Commission has approved substandard contracts and made government funds available to them.

(*b*) While the Minister has repeatedly agreed to centralize Health Services under an independent Commission, his department, under the auspices of the Health Services Planning Commission has advocated and endorsed decentralized control into the hands of Regional Health Boards composed chiefly of laymen. This endorsation has been approved in booklets issued by the Department of Health.

(*c*) While the Minister agreed that in the development of Health Regions, services relating to purely medical services and those of consultants and specialists would not be advocated without full consultation with the medical profession, the Department is apparently suggesting to Regional Health Boards that they proceed to organize, develop, and operate such services under Regional Board Control essentially.

193. 2. *Promotion of Health Regions.* The Department of Health is advocating the division of the province into 14 Health Regions with a population in each of not less than 40,000 people. It is suggested that each be equipped with a Regional Hospital, a competent staff of doctors and nurses, sanitary engineers, special clinics, and a full-time Medical Health Officer who would supervise public health in the region and co-ordinate other medical services. Within each region would be "District Hospitals" which will at times have at their disposal the services of specialists and consultants from the Regional hospital.

194. Out of the consolidated funds of the province the government offers to contribute two-thirds of the cost of public health services and two-thirds of the cost of diagnostic and laboratory equipment. The government would employ the public health staff of the region and pay two-thirds of their salaries. These contributions are held out as an inducement to encourage the formation and development of Health Regions under the auspices of the Health Services Planning Commission. Two Rural Health Regions are in the process of development, namely, in Swift Current area and in the Weyburn area. An urban Health Region set-up is contemplated in the Moose Jaw region but the government blueprints for this region are not known to the Medical Advisory Committee as yet.

195. As the Municipal Doctor scheme is intimately related to the development of Health Regions it is of interest to note that the government contributes 25 cents per head per year to a municipality if the municipal doctor contract is approved by the Health Services Planning Commission. A further contribution up to $2.00 per head is made on the basis of the average equalized assessment rating in the municipality.

3. The government supports a system of free treatment for cancer cases throughout the province.

4. Doctors in certain local improvement districts and sparsely settled areas are partially subsidized by government funds, to retain their services in such areas.

5. On January 1, 1945 the government undertook to provide free hospitalization, medical services, and drugs to a group of approximately 25,000 people composed of Old Age Pensioners, Widows and Orphans, Blind Pensioners and Government Wards. The cost of medical services was based on the recommendations of the Heagerty Report, namely, $9.50 per head. The medical scheme has been directed by a Medical Advisory Committee of three doctors appointed by the Minister on recommendation of the College of Physicians and Surgeons, and all medical accounts have been assessed by this Committee. An analysis of this experimental scheme for the year 1945 will be available shortly and should provide some valuable data.

6. The Minister has announced a scheme of free hospitalization embodying all residents of the province to commence January 1, 1947. The estimated cost is $4.60 per head plus an additional 60 cents per head for non-hospital diagnostic service for ambulatory cases.

7. Providing the Dominion-Provincial conferences are successfully concluded, the government proposes as quickly as possible to institute an over all scheme for the province which will provide hospitalization, medical services, nursing services, drugs, certain dental services, as well as augmented public health services.

Aims and Reactions of the College of Physicians and Surgeons

196. 1. Close co-operation with the C.M.A. and its objectives.

2. Advocation of:

(*a*) A system of State-aided Health Insurance under the administration of a politically independent Commission with adequate representation of the professional groups, the government and those receiving the service, only with the approval of the professional groups concerned.

(*b*) The principle of "Free choice of Doctor" for the patient.

(*c*) The fee-for-service basis of payment where such is possible.

(*d*) Centralized administrative control as opposed to regional control.

(*e*) Acceleration of public health services with the province divided into public health regions. Close co-operation between the medical profession and public health services.

(*f*) A system of free hospitalization with a rapid development of hospital facilities and beds, on a sound planned basis.

(*g*) Encouragement of group practice (in rural areas) of two or more doctors with good facilities, rather than individual doctors in widespread areas with resultant handicaps.

(*h*) An improved standard Municipal Doctor Contract embodying more adequate remuneration and a minimum standard of facilities and equipment at his disposal.

(*i*) Withholding of local autonomy regarding medical services, specialists and consultant services in so-called "Health Regions".

(*j*) The services of specialists and consultants to be made readily available at centres where technical personnel and adequate facilities will be at their disposal. Rather than advocating the development of numerous semi-efficient Health Region Clinics with the limited personnel which will be available, the medical profession advocates fewer clinical centres, adequately staffed, with facilities provided for transportation of the patient etc. to such clinical centres. (The Department of Health apparently is encouraging the idea that each of the proposed fourteen Health Regions can be staffed with practically a complete service including the services of specialists, consultants, etc.)

Immediate Objectives and Aspirations of the College of Physicians and Surgeons

197. 1. To actively assist the Minister of Health in obtaining a qualified Chairman to the Health Services Planning Commission, such Chairman to be appointed Chairman of the independent Administrative Commission upon its creation.

2. Continued close contact with the Minister of Health by the Medical Advisory Committee of which Dr. A. E. Archer is a member.

3. An enlightened program of public education.

4. Close contact with each member of the profession throughout the province as to our position, state of negotiation and progress.

5. A close scrutiny of Health Region developments especially in relation to medical services.

6. Insistence on Health Region negotiation for medical services through official College of Physicians and Surgeons channels.

ALBERTA

198. During the winter the Nucleus Committee of the Committee on Economics met seven times. Its discussions were chiefly concerned with general plans for a desirable form of health service for the province. In order to gain information as to the wishes of the people in this respect, several meetings were arranged between the Nucleus Committee and officials representing Farmers and Farm Women, School Trustees, School Teachers, Municipal Districts, Civil Service and Manufacturers. At these meetings a lively expression of ideas and opinions was obtained.

199. In general, the Committee endorsed the principle of trying to plan for a service which would develop a number of well staffed and well equipped medical centres in strategic locations across the province. It was considered wise to encourage the development of services up to and including certain specialties, in suitable locations and to tie this whole service in with a fully equipped and fully staffed central service. This should be done in such a manner that the preventive and curative services might be closely integrated. At its last meeting, in conjunction with the Council, a draft of a Health Insurance Bill, which has been prepared and given its first reading, was considered. This Bill is designed to enable the province to fit its services into a pattern which will entitle it to grants from the Federal Government, if and when these grants became available. The Bill was prepared without consultation with the profession although our co-operation was offered. It contains some useful features but also a number of important, undesirable features. The features most open to criticism are the form of administration, which is completely centralized under the Department of Health, and the attempt to regionalize services. It would appear to be undesirable to set up a service in a defined, circumscribed area unless it is possible to duplicate it in all other parts of the province with services of the same standard. While there continues to be a great shortage of trained personnel, and that will continue for at least 8 to 10 years, it is wasteful of personnel and hence undesirable to attempt to regionalize the service to a restricted geographical area.

200. The Minister of Health has assured the Committee that if Federal grants become available, another session of the legislature will likely be held before the Act becomes operative and that copies of the Act will be widely distributed and comments sought from interested groups. It would appear that this might provide an opportunity for amendments if such amendments are considered to be in the best interest of those concerned.

SPECIAL STUDIES

BASIC REQUIREMENTS FOR THE IMPROVEMENT OF HEALTH SERVICES

201. In June 1945 the Committee on Economics presented to General Council its considered opinion regarding basic requirements for the improvement of health services. In the intervening year each Division has been asked to study these requirements and to submit comments and suggestions. Each of the nine Divisions has co-operated in this study and the Nucleus of the Committee has incorporated these suggestions in the revision of these basic requirements. It is the opinion of your Committee that before proceeding to institute a curative medical service for the population generally, the fundamentals here outlined should be provided as a basis upon which any further extension of service should rest. The following seven points have been laid down as a foundation upon which health services should be built.

1. Improved standards of living.
2. Preventive program.

3. Diagnostic services.
4. Hospital services.
5. Medical and allied services for remote areas.
6. Complete service for the welfare group.
7. Education: (*a*) public,
   (*b*) medical profession.

I. Improved Standards of Living

202. The following is stated as the second Principle of the Canadian Medical Association, relating to Health Insurance:

> *"Inasmuch as the health of the people depends to a great extent upon environmental conditions under which they live and work, upon security against fear and want, upon adequate nutrition, upon educational facilities, and upon the opportunities for exercise and leisure, the improvement and extension of measures to satisfy these needs should precede or accompany any future organization of medical service. Failure to provide these measures will seriously jeopardize the success of any Health Insurance plan."*

II. Preventive Program

203. The basic requirements for an adequate preventive program are as follows:

(*a*) *Prevention of such acute communicable diseases as lend themselves to control by immunization.*

(*b*) *Control of chronic communicable diseases, including diagnostic facilities and treatment, e.g. tuberculosis and venereal diseases.*

(*c*) *Supervision of environmental sanitation, including water supplies, sewage and refuse disposal, adequate housing, etc.*

(*d*) *Adequate supervision of food and food-handling establishments.*

(*e*) *Supervision of the health of students in both elementary and secondary schools including services for infants and pre-school children.*

(*f*) *Adequate pre-natal and post-natal care.*

(*g*) *Provision of suitable record centres for clinical reports and vital statistical information. This information should be maintained and made available in a manner to be of value to the health of the nation.*

(*h*) *Provision for mental hygiene.*

(*i*) *Utilization and remuneration of the family doctor in implementing the preventive program.*

III. Diagnostic Services

204. *The provision of adequate diagnostic services at strategic centres throughout the provinces is an urgent need for improvement of health services in Canada.*

205. No patient should be unable to obtain the benefits of modern highly developed diagnostic procedures because of geographic inaccessibility or lack of financial means. These diagnostic centres should have the services of skilled professional and technical personnel, but this does not mean the unnecessary duplication of diagnostic centres or wasteful decentralization of skilled professional and technical personnel. The method of making these services available, particularly to doctors and patients in rural areas, should be given serious study.

IV. Hospital Services

206. *An adequate number of hospital beds should be provided in each province. This is a first requirement in any program for improved health services. Hospitals in suburban and rural areas should be strategically located, the number of hospital beds varying with the population and extent of the area served.*

i. The hospitals required are:
   1. General Hospitals.
   2. Special hospitals for
      (*a*) Convalescents;
      (*b*) Chronically ill and invalids;
      (*c*) Tuberculous;
      (*d*) Mentally ill;
      (*e*) Children;
      (*f*) Outpost service;
      (*g*) Communicable diseases.

ii. In the construction and maintenance of hospitals, the government should bear a substantial share of the cost.

iii. For the adequate functioning of any hospital the following qualified personnel are required:

Administrators (*a*) professional;
(*b*) lay;
Nurse supervisors;
Training school instructors;
General duty nurses;
Radiologists and pathologists;
Laboratory and x-ray technicians;
Dietitians.

In the smaller hospitals certain of the personnel may serve several separate institutions.

iv. Estimates of the number of active hospital beds required vary in different provinces and in different areas. The number of active beds required per thousand depends upon several factors: the industrialization of the area, housing conditions, hospitalization legislation or voluntary plans, amount of work referred to local doctors and transportation facilities. Also this active hospital bed requirement will be very largely influenced by the accommodation available in special hospitals for the chronically ill and the convalescent patients. Accommodation in homes for the senile will also affect the active bed requirement. Some provinces have twice as many active beds as have others (*e.g.*, Alberta and British Columbia), yet are still short. Some cities run as high as 15 to 18 public beds per thousand of population, yet are still short. Undoubtedly under any system that would provide hospitalization without immediate cost to the patient, the requirement in every province would rise steeply.

207. A broad estimate of the need of hospital beds in Canada might be:

	Present No.	*Total present need*	*Total needed 10 years hence*
Active .....(public)	45,609	55,000	65,000
Chronic and incurable	2,632	13,500	16,000
Convalescent	900	2,200	2,500
Tuberculosis	12,060	19,560	19,560
Mental	38,928	50,000	55,000
Communicable diseases ...	1,437	3,000	3,000
Totals 101,566		143,260	161,060

v. *Costs.* Most hospital consultants are very hesitant to make any specific estimate of the cost of construction or even of maintenance in the immediate future.

208. *Construction costs* are fluctuating at the present time with only a modest drop anticipated in the post-war years. The best informed opinion at the present time would suggest that the average cost of active hospital construction should be placed at about $5,000 per bed. It is quite likely that much construction will be

done at lower figures, particularly if only a wing is being built or a small building of less durable construction. On the other hand standards of construction are constantly rising and some of our large-scale construction with extensive kitchens, boiler plants, residences, outpatient clinics, etc., may reach $8,000 to $10,000 a bed. A better method of calculation is on the cubic foot cost basis, formerly 55 to 65 cents—now reaching 80 to 85 cents. It would be useful at this time to give careful consideration to some simplification of hospital plans which would eliminate some of the optional elaborations which are being introduced. It is possible that, without sacrificing safety or efficiency, plans could be produced which would substantially reduce cost of construction. Our medical staffs should be impressed with the desirability, at this time, of recommending emphasis on efficiency and safety in construction without introducing undue refinements.

209. The construction of hospitals for chronically ill or incurable patients, for tuberculous and for mentally ill patients should cost less, but, considering the services to be provided, it is estimated by competent architects that these would average $4,000 a bed. The modern, well-equipped convalescent hospital will probably cost as much.

On the above bases, the cost of new hospital construction required in Canada will be approximately as follows:

	Immediate expenditure	*Additional within 10 years*	*Total*
Active	$ 46,955,000	$50,000,000	$ 96,955,000
Other	$129,212,000	$31,200,000	$160,412,000
Grand total			$257,367,000

210. This total would be spread over the next ten years; however, at the end of that period it is likely that further expansion, though at a reduced tempo, would be needed. In addition to a continued increase in use, heavy replacements would be necessary for many of our present buildings are fast becoming obsolete.

The above figures represent the cost of the construction that would be needed to fully meet our hospital requirements. In actual experience the amount of construction undertaken would probably fall short of this total. The actual amount of construction now contemplated for active hospitals does approximate the figures given, but there will probably be a considerable lag in the construction of chronic, convalescent and communicable diseases hospitals. The construction of hospitals for the mentally ill and the tuberculous will probably fall short of the number of beds stated above as really necessary.

211. *Costs of operation* are likely to rise sharply with the present labour unrest and much equipment to be replaced. Reported costs seldom include all factors. Also it is doubtful if any province in Canada, except one now completing an intensive two-year study, has really accurate figures at the present time as to actual costs. This province, despite uniform accounting returns for many years, now finds many variations in the interpretations made of many details as a result of this painstaking survey, done by a joint committee of the hospital association and the government with a cost to the former of some $9,000. In this province the average per diem cost of operation for 111 hospitals (1944) has been found to be $4.42 per patient per day, with certain large public hospitals having operating costs as high as $6.25 per patient per day and a smaller one calculated at $6.58.

212. Presuming a conservative national average of $4.00 per patient-day for active hospitals and allowing for a 65% average occupancy (which is the accepted average to meet peak demands), the annual cost of maintenance for 55,000 active beds would be $52,195,000 and for 65,000 beds (10 years hence), $61,685,000. These figures may well be much higher.

213. Estimating $2.00 for hospitals for chronically ill and incurables and a 90% occupancy, the cost of operation for 13,500 beds would be $8,869,500 and for 16,000 beds ten years hence $10,512,000.

214. In convalescent hospitals present costs vary from $2.00 to $3.25 per diem depending upon the extent and quality of the rehabilitation care given. Presuming we are dealing with institutions properly equipped to provide physiotherapy, occupational therapy, etc., at an average cost of $3.00 per diem and counting on an average occupancy of 80%, the annual operating cost for 2,200 beds would be $1,927,200, and for 2,500 beds, $2,190,000.

215. SUMMARY OF OPERATING COSTS

	If present needs are met	*To meet needs 10 years hence*
Active hospitals	$52,195,000	$61,685,000
Chronically ill and incurable patients	8,869,500	10,512,000
Convalescent hospitals	1,927,200	2,190,000
Tuberculosis sanatoria ...	23,203,050	23,203,050
Mental hospitals	28,387,500	31,116,250
Communicable disease hospitals	1,368,750	1,368,750
Total	$115,951,000	$130,075,050

(These figures do not include the cost of hospitalizing war veterans under the D.V.A.)

Amortizing construction costs over 10 years and	$25,736,700
Averaging operating costs over 10 years ..	123,013,025
annually	$148,749,725

V. MEDICAL AND ALLIED SERVICES FOR REMOTE AREAS

216. A health program for these areas should make provision for:

(*a*) *The payment of a subsidy where necessary to ensure the location of a physician.*

(*b*) *District nursing services.*

(*c*) *Outpost hospital and nursing stations.*

(*d*) *Adequate provision for diagnosis.*

(*e*) *Ambulance and other transportation facilities for patients.*

VI. COMPLETE SERVICE FOR THE WELFARE GROUP

217. *Complete health service, both in and out of hospital, should be provided for the welfare group (indigents, mothers' allowance recipients, blind, old age pensioners).*

A partial plan has been put into operation in Saskatchewan (January 1, 1945). The amount set aside by the government is $9.50 per person per year for complete medical services in and out of hospital. During the calendar year 1945 the available fund was sufficient to pay 77.5% of doctors' accounts at minimum tariff rates. It is estimated that the percentage payable in 1946 will be substantially lower.

In Ontario a partial scheme has been in operation for 10 years, covering home, office and confinement service and mileage, at an annual capitation fee of $6.72. In 1945 the fund provided for the payment of doctors' accounts at 79% of the tariff for the limited types of service rendered. A recent attempt to have this service extended to give complete medical care in home, office and hospital to all beneficiaries under the welfare plan has not met with success. The uncertainties of the outcome of the Dominion-Provincial conference make the government of Ontario reluctant

to extend the services to the welfare group, although it has been pointed out that this group, numbering approximately 90,000 would be of very considerable value for a fact-finding investigation into the cost of a complete service under conditions of practice as they now exist.

VII. EDUCATION

218. (*a*) *Education of the public respecting individual responsibilities and liabilities in any improved system of health services.*

(*b*) *Education of the profession:*

i. Undergraduate — adjustment in curricula where necessary to stress social and preventive medicine.

ii. Postgraduate — refresher courses especially in the field of social and preventive medicine.

This is necessary if we are sincere in our demand that the family doctor be used in implementing the preventive program.

Your committee feels that until the medical profession in each community undertakes to educate the people, neither this nor any other program for improved health services can be made effective.

VOLUNTARY PLANS FOR PREPAID MEDICAL CARE

219. It was agreed that voluntary schemes are not a complete answer to the problem of improved health services although it is recognized that there is a demand for such schemes by a large proportion of the population. The medical profession is exploring these schemes in several of the provinces.

RECOMMENDATION

220. That the Canadian Medical Association endorse as a definite policy, these "Basic Requirements for the Improvement of Health Services".

RESIGNATION OF THE SECRETARY

221. It is with profound regret that we have accepted the resignation of the Secretary of this Committee, Dr. Harvey Agnew. Not only has he ably assisted in the work of the Committee, but his enthusiasm has been infectious, his vision and his understanding wide. We welcome to this post Dr. A. D. Kelly who has recently joined the staff of the Canadian Medical Association.

ACKNOWLEDGMENTS

222. The Chairman of this Committee desires to express appreciation on behalf of the Association and on his own behalf, of the co-operation of the Divisional Committees, of the Nucleus Committee and of those individual members who have participated in the work of this Committee throughout the past year.

All of which is respectfully submitted.

HARRIS McPHEDRAN,
Chairman.

Approved.

SUPPLEMENTARY REPORT OF THE COMMITTEE ON ECONOMICS

The supplementary report of the Committee on Economics was considered clause by clause, and action taken as indicated:

1. That the Canadian Medical Association reaffirm the principle that, in the administration of a plan of medical service an independent, non-political commission be the executive body. The principle reads as follows: "Health Insurance should be administered by an independent non-political commission representative of those giving and those receiving the services. Matters of professional detail should be determined by committees representative of the professional groups concerned".

Approved.

2. The C.M.A. cannot recommend the system known as "Municipal Doctor Service" as a final solution of medical care to rural areas. In modern practice, with its complicated scientific procedures, the service provided by a single doctor should not be long advocated as the best that can be provided. However, in view of the fact that "Municipal Practice" has developed to a considerable extent in certain areas, we would recommend:

   1. Its most useful fields for service will be:
      (*a*) In remote or impoverished areas. (It is likely that in these areas provincial subsidies may be necessary also.)
      (*b*) In those municipalities in which doctors could not reasonably be expected to locate under other financial arrangements.
      (*c*) In other areas, as a temporary expedient, to be replaced whenever the general development permits access to a more complete service.

Approved.

   2. Wherever municipal contracts are being negotiated, it should be done under conditions and terms which the C.M.A. regards as being in the interests of a sound service for the people.

Approved.

3. (1) Any contract shall be negotiated for the medical profession by the Division of the C.M.A. concerned.

   (2) In any contract the salary stated shall be the net salary to the doctor.

   (3) All the contracts shall contain provisions for:
      (*a*) Annual holidays of three weeks with pay.
      (*b*) Leave with pay to attend District Society and Divisional Meetings of the C.M.A. and also Health Officers Meetings of the province.
      (*c*) Leave with pay to attend bona fide postgraduate work at least every two years for a minimum of one month per year. If the doctor does not avail himself of this opportunity he shall forfeit the privilege except in case of illness or other circumstances beyond his control.
      (*d*) Sickness leave with pay on due proof.
      (*e*) Superannuation at an agreed age and on a basis satisfactory to the administrative body and the Provincial Division of the C.M.A.
      (*f*) The optimum number of people to be served by a doctor is to be defined by the provincial division of the C.M.A. concerned.
      (*g*) A minimum net salary of $3,600 per annum (C.L.I. 1946) for a recent graduate on a basis of General Practitioner care for 1,500 people or less; and increments of increase depending upon the length of service, experience and number of people served as agreed upon by the Division of the C.M.A. concerned.
      (*h*) A deterrent clause to discourage unnecessary calls.

Approved.

4. That, in the development of curative health services in a province, the Canadian Medical Association does not approve of regional administration except for experimental purposes, but does favour central province-wide administration.

Approved.

5. That the Canadian Medical Association reaffirm the principle relative to freedom of choice of doctor which reads as follows:

"It is not in the patient's interest that the State invade the professional aspects of the patient-doctor relationship. Subject to geographical and ethical restrictions, this relationship includes free choice of doctor by patient and free choice of patient by doctor; it implies also maintenance of the confidential nature of medical practice."

Approved.

6. That the Canadian Medical Association reaffirm its principle on the method of payment of doctors under any plan of provincially organized medical service. The Principle reads as follows:

"The method or methods of remuneration of the medical practitioners and the rate thereof, should be agreed upon by the medical profession and the Commission of the Province."

Approved.

7. In relation to the attitude of the Canadian Medical Association toward plans of voluntary prepaid medical care, the Committee on Economics recommends:

   1. That the medical profession in each Province should attempt to meet public demand for prepaid medical care wherever it exists by providing a plan of prepaid medical care sponsored by the medical profession.
   2. While the method and the timing of the introduction of any plan of voluntary prepaid medical care must remain a responsibility of the profession within the province, the principles underlying any such plan should be in accord with our general principles and conform to a broad plan for voluntary prepayment care to be worked out by the Canadian Medical Association.

Referred to the Committee on Economics.

8. In relation to the attitude of the Canadian Medical Association towards Government sponsored extensions of curative health services, the Committee on Economics recommends that:

   1. When Governments decide to proceed in providing an extension of medical services, the medical profession should attempt to guide this development.
   2. Where developments in the extension of medical services sponsored by the Government are considered by the medical profession to be unsound, the medical profession should:
      (*a*) Draw to the attention of Government those portions of its proposal which are considered to be unsound.
      (*b*) Meet representatives of strategic lay groups and draw attention to the inadequacies of the Government proposals.
      (*c*) Advise the Central Office of the Canadian Medical Association of the situation and obtain the advice and endorsation of the whole organization.
      (*d*) If the foregoing procedures fail, organize the medical profession within the province to take common ground to resist unsound developments.

Referred to the Committee on Economics.

9. The Committee on Economics recommends to the Executive Committee that the incoming Chairman of the Committee on Economics for the ensuing year to be requested to set up subcommittees for the study of the following matters:
   (*a*) Contracts involving the employment of doctors.
   (*b*) Voluntary prepaid medical plans.
   (*c*) Salaries of doctors employed in government and other institutions.

Approved.

Subscription Rates to the Journal

It was agreed that, commencing with January 1, 1947, the subscription rate for the *Journal* be $7.50 per annum for all subscribers except medical students. This will replace the $6.00 rate for Canadian subscribers, the $7.35 rate outside of Canada and the $5.00 rate for advertisers. It was also agreed that the $4.00 subscription rate for members of the armed forces should be continued for another year; and that medical students and interns should be charged $2.50 per annum.

Section of Military Medicine

The following resolutions were received from the Section of Military Medicine:

1. "Whereas, prior to the war, 1939-1945, there was only one armed force medical service; and whereas there are now three sister services; therefore be it resolved that request be made for the changing of the name, The Section of Military Medicine, to that of "The Armed Forces Medical Section of the Canadian Medical Association."

   Approved.

2. "Whereas the Executive, Council and Members of the C.M.A. have given unfailing support in every way to the armed forces medical services during the war; and whereas the C.M.A. has extended the courtesy of honorary membership to returning service medical officers; be it resolved that this section expresses, on behalf of the 6,000 medical officers it represents, sincere thanks to the Canadian Medical Association; and be it also resolved that this section will give every co-operation in the future work of the C.M.A.."

   Approved.

3. "Whereas the C.M.A. did in 1944 pass a resolution *re* a unification of all federal health services; and whereas this has been interpreted in certain quarters as including the armed forces medical services;
   Therefore be it resolved that the Section of Military Medicine requests that the Executive Committee of the C.M.A. take such steps as they consider necessary to make it clear to the appropriate authority in Ottawa that it was not the intention of the C.M.A. to include the armed forces medical services in that it was not felt that the armed forces medical services should be divorced from the Defence Ministry or Ministries."
   It was duly moved, seconded and agreed that, having been advised by the Government that an Inter-Departmental Co-ordinating Com-

mittee, as recommended by the C.M.P.A.B. has been established, and presuming that the matters referred to in this resolution will no doubt be subject to discussion in the co-ordinating committee, be it resolved that this communication be laid on the table to be considered by the Executive Committee after the matter has been discussed in the Inter-Departmental Co-ordinating Committee.

Pasteurization of Milk

The Executive Committee went on record as in favour of the principle of compulsory pasteurization of milk.

OFFICERS

The following are the officers of the Association for the ensuing year:

Immediate Past President—Dr. Léon Gérin-Lajoie, Montreal.

President—Dr. Wallace Wilson, Vancouver.

President-Elect—Dr. F. G. McGuinness, Winnipeg.

Chairman of General Council and of the Executive Committee—Dr. Harris McPhedran, Toronto.

Honorary Treasurer and Managing Editor—Dr. D. Sclater Lewis, Montreal.

General Secretary—Dr. T. C. Routley, Toronto.

Assistant Secretary—Dr. A. D. Kelly, Toronto.

Editor—Dr. H. E. MacDermot, Montreal.

Consultant in Medical Economics—Dr. A. E. Archer, Lamont, Alta.

Divisional Representatives on the Executive Committee

British Columbia—Dr. A. H. Meneely, Nanaimo.
Alternate—Dr. Ethlyn Trapp, Vancouver.

Alberta—Dr. Harold Orr, Edmonton.
Alternate—Dr. F. T. Campbell, Calgary.

Saskatchewan—Dr. J. F. C. Anderson, Saskatoon.
Alternate—Dr. E. A. McCusker, Regina.

Manitoba—Dr. P. H. McNulty, Winnipeg.
Alternate—Dr. J. R. Martin, Neepawa.

Ontario—Dr. Wm. Magner, Toronto.
Dr. C. J. Devins, Aurora.
Dr. C. C. White, Chatham.
Alternate—Dr. J. E. Carson, Brantford.

Quebec—Dr. J. R. Fraser, Montreal.
Dr. C. A. Gauthier, Quebec.
Dr. E. S. Mills, Montreal.
Alternate—Dr. Walter Scriver, Montreal.

New Brunswick—Dr. A. F. VanWart, Fredericton.
Alternate—Dr. Geo. Skinner, Saint John.

Nova Scotia—Dr. H. K. MacDonald, Halifax.
Alternate—Dr. J. G. B. Lynch, Sydney.

Prince Edward Island—Dr. W. J. P. MacMillan, Charlottetown.
Alternate—Dr. J. F. McNeill, Summerside.

Chairmen of Committees

Archives—Dr. H. E. MacDermot, Montreal, Que.

Awards Scholarships and Lectures—Dr. Duncan Graham, Toronto, Ont.

Department of Cancer Control and Study Committee on Cancer—Dr. William Boyd, Toronto, Ont.

Central Program Committee—Dr. H. K. Detweiler, Toronto, Ont.

Credentials and Ethics—Dr. J. D. Adamson, Winnipeg, Man.

Economics—Dr. G. F. Strong, Vancouver, B.C.

Editorial Board—Dr. H. E. MacDermot, Montreal, Que.

Epidemics—Dr. T. H. Leggett, Ottawa, Ont.

Advisory Committee on Finance—Dr. D. S. Lewis, Montreal, Que.

Hospital Internships—Dr. G. Harvey Agnew, Toronto, Ont.

Industrial Medicine—Dr. Graham Ross, Montreal, Que.

Laboratory Technicians—Dr. George Shanks, Toronto, Ont.

Legislation—Dr. C. J. Veniot, Bathurst, N.B. and Ottawa, Ont.

Maternal Welfare—Dr. A. B. Nash, Victoria, B.C.

Negotiating Committee with D.V.A.—Dr. F. G. McGuinness, Winnipeg, Man.

Education—Dr. O. W. Niemeier, Hamilton, Ont.

Membership—Dr. A. B. Whytock, Niagara Falls, Ont.

Meyers Memorial—Dr. George Boyer, Toronto, Ont.

Nutrition—Dr. F. F. Tisdall, Toronto, Ont.

Pharmacy—Dr. J. K. W. Ferguson, Toronto, Ont.

Post Graduate—Dr. Ray Farquharson, Toronto, Ont.

Rehabilitation—Dr. H. M. Elder, Montreal, Que.

Public Health—Dr. Vance Ward, Montreal.

All of which is respectfully submitted,

T. C. ROUTLEY,
General Secretary.